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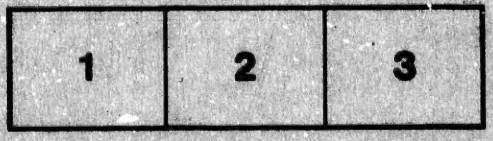

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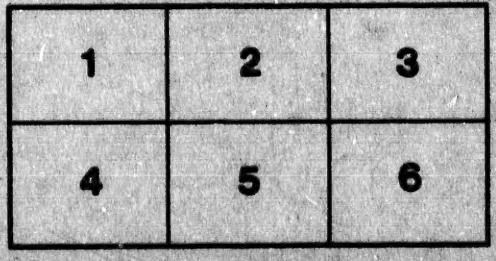


REPORT

ON

Montreal Northern Colonization

RAILWAY,

Montreal to City of Ottawa,

WITH

BRANCH LINE TO ST. JEROME.

By CHARLES LEGGE, Esquire, C. E.,

Chief Engineer M. N. C. Railway.

MONTREAL:

GAZETTE PRINTING HOUSE, CORNER CRAIG AND FRANCOIS XAVIER STREETS.

1872.

REPORT.

MONTREAL, 19TH JANUARY, 1872.

To the President and Directors, Montreal Northern Colonization Railway.

GENTLEMEN,

Having been requested to furnish you with the information in my possession, with reference to the "Montreal Northern Colonization Railway," between the cities of Montreal and Ottawa, including the branch line to St. Jerome, I have prepared plans of surveys and profiles made under your directions; and also finished copies of those made some sixteen years ago by Messrs. Sykes, De Bergue & Co., for the Montreal and Bytown Railway, between the same points, which have lately come into my possession. These plans I now beg to lay before you, together with close approximate estimates, in detail, of the cost of constructing a line of railway between the extreme points mentioned, by the various routes to be presently described.

These calculations being based principally on data furnished by the detailed sections of the actual surveys, supplemented by information gained in a personal examination of the entire route, I can with considerable confidence submit the results, as reliable, and not exceeding the actual cost at which the work will be executed.

Before submitting the conclusions arrived at, it may be well to give a brief historical glance at the enterprise, for the information of gentlemen who have recently joined the company, and who may not be so well informed on various points connected with the work as those who have been associated with it for a longer period.

The first feasible project of uniting the cities of Montreal and Ottawa by a railway running on the north side of the Ottawa, dates from the years 1852 and 1853, under a charter granted to the "Montreal and Bytown Railway Company." The line surveyed, adopted, and partially constructed, started from the Harbor near the foot of Jacques Cartier Square, and by a tunnel reached Craig Street, thence on the east of St. Denis Street, to the height of land at Côte-à-Barron, and northerly to the Back River, crossing it about 500 feet east of Vinet's Bridge, afterwards striking in the direction of St. Martin and St. Eustache. From the latter place the line passed through Belle-Rivière and St. Andrews, touching the Ottawa River

at Carillon, and following its north shore through Grenville, in a very direct line to the Village of Hull, crossing in its course the Rivers Rouge, Nation, Aux Lièvres, Gatineau, and various small streams near their confluence with the Ottawa. From the Gatineau, the line passed north of the pond, along the valley of Mill Creek, over the main river near the Suspension Bridge, into the City of Ottawa, and terminated at the present depôt of the Canada Central Railway.

Attached to the contract for this line, was one for the construction of two branch roads, or tramways, with strap rails similar to the Rawdon and Industry line; one of ten miles to St. Jerome, and one of thirteen miles to Lachute, or twenty-three miles in all, of a cheaper construction than the main trunk. By the contract, the contractors were to receive for one hundred and ten miles of main line and twenty-three miles of tramway, the sum of £770,000 stg., or about $3,850,000,—and in the event of the work exceeding two and one half per cent of the estimated lengths, then the contractors were to receive £6,500 stg., ($32,500) per mile of excess on the main line, and £1,200 stg., ($6,000) per mile for extra length of tramways.

Now, taking the ascertained distance to Ottawa at 119½ miles, it gives a surplus of 9½ miles at $32,500, or a total, including tramways, of $4,158,750. Deducting from this the cost of 23 miles of tramway at $6,000 per mile, leaves a sum equal to $4,020,750 for 119½ miles of main line, or at the rate of $33,646 per mile, embracing also a very moderate quantity of rolling stock, as per a schedule furnished.

These figures of contract cost, are given with the view of instituting a comparison in an after part of the report, and to show the public that the present estimated cost of the road is very considerably less. The gauge was to be determined by the company within six months, failing in which, the Contractors had the privilege of doing so; the land was also furnished free to the Contractors.

The section between Carillon and Grenville, 13 miles in length, was built, and a commencement made at several other points, when the work was suspended by the unfortunate death, by drowning, of the leading member of the contracting firm, and has remained in abeyance ever since.

The next step of any importance to open up railway communication with the north, took place in the latter part of the year 1868. This movement resulted in the formation of a Company for the construction of a cheap wooden railway from the Mile End suburb of Montreal, to St. Jerome. A charter was obtained for the scheme, in the following year, which, among other privileges, gave

the right to continue ne line from St. Jerome northward to St. Agathe, or easterly to Rawdon; also to extend branch roads in various directions, but notably to unite with any railway coming from Ottawa City towards Montreal. The charter carried a government subsidy of three per cent. on a *bonâ fide* cost of five thousand dollars per mile, and a like subsidy on all bridges exceeding five thousand dollars each.

During the summer of 1869 surveys were made to determine the most suitable route, both with reference to cost and distance, between the Montreal Harbor at Hochelaga and St. Jerome. From the reports of surveys published at the time, the following synopsis of lines is given.

ROUTES.	Total Length.	Total Cost.	Cost per Mile.	Length of Straig't Line.	Length of Curved Line.	Total Am't of Curvature.	Total length of Bridges
	Miles.	$	$	Miles.	Miles.	Deg.	Feet.
No. 1. — Hochelaga *via* Sault au Rec., St. Rose, St. Therese, to St. Jerome..	30.85	654,609	21,219	23.21	7.64	704	3,588
No. 2. — Hochelaga *via* Vinet's Bridge, St. Rose, St. Therese, to St. Jerome	30.43	567,298	18,642	24.94	5.49	459	3,322
No. 3. — Hochelaga *via* Vinet's Bridge, Moulin a la Dalle, St. Therese, to St. Jerome.....	34.04	489,654	14,384	27.98	6.09	591	1,972
No. 4. — Hochelaga *via* Vinet's Bridge, Porteous Crossing, St. Therese, to St. Jerome.....	30.36	440,531	14,510	25.52	4.84	438	1,752

An examination of the above table will indicate Line No. 4, as excelling all its competitors in respect to shortness, cheapness, proportion of straight line, curvature and length of bridging, and therefore to be adopted if the most direct and cheapest route to St. Jerome is required.

The superstructure of the railway being of wood, did not inspire sufficient confidence in its durability or efficiency to lead the public to regard the enterprise with favor, and therefore but little progress was made beyond obtaining the preliminary surveys alluded to. To overcome this difficulty application was made to the Local Legislature to amend the charter and allow iron to be substituted for wood, with such additional subsidy as might enable the company to carry out the work.

The prayer of the company was granted, and by an amended charter, permission to use iron rails is given, and in the event of such

being used a land subsidy of 5000 acres per mile from Montreal to Grenville, a distance of 60 miles, with 15,000 acres per mile from thence to Ottawa, 60 miles additional, is granted, making an average of 10,000 per mile for the entire distance, the extra quantity per mile from Grenville to Ottawa being apparently for the purpose of inducing the company to run the line entirely through the Province of Quebec, and so aid the Colonization movement. The remaining portion of the wooden railway scheme, continuing under the original charter, to preserve the guarantee of three per cent on $5,000 per mile.

Negotiations in the mean time had been going on with the Canada Central Railway Co., to form a junction with their road by extending it from Ottawa to Hawkesbury, a village in Ontario, on the south side of the Ottawa River, opposite Grenville, the "Northern Colonization" meeting this line at that point, as permitted by the original charter, and in this manner obtaining a through line between Montreal and Ottawa, with such running and traffic arrangements as would be mutually satisfactory to both companies. At this stage of the work I was strongly in favor of the policy of carrying the main line of your road *via* St. Jerome and Lachute. This arrangement, although giving a longer main through route by several miles than if it were carried from St. Therese to Grenville *via* St. Andrews or Lachute, would have entailed far less cost in first construction, and subsequent independent working of the branch line from St. Therese to St. Jerome. As in the first instance, one and the same train service would accommodate the entire country.

The Canada Central Co., having failed in obtaining from the Ontario Government, a renewal of their land grant of 12,000 acres per mile for the sixty miles between Ottawa City and Hawkesbury, and on which it had depended for assistance to enable it to carry out the work in accordance with the agreement entered into with the Northern Colonization, for a junction at Grenville, was reluctantly compelled to abandon that idea.

The more enlightened policy of the sister Province of Quebec, in granting 15,000 acres per mile from Grenville to Ottawa in the event of the line following the north shore, again opened a door of hope that the project of uniting the commercial and political capitals of the Dominion, might be crowned with success.

If this could be effected, the two Railway companies were once more in perfect accord, as with a junction of the two lines effected at Ottawa, the City of Montreal would by means of the Canada Central, have a direct rail communication with the Upper Ottawa, and eventually in the onward progress of that road, touch Lake Huron, and

possibly connect with the American Northern Pacific Line at the Sault Ste. Marie.

It will be in the recollection of some of you, when the project of locating the Northern Colonization Road on the north side of the River from Grenville to Hull was first announced, that it was received with great derision by many people who professed to be fully acquainted with the character of that country, they affirming that the construction of the road was impossible in an engineering point of view, except at a cost which would soon swallow up the resources of the Company, including the $1,000,000 from Montreal, with but little to show for the expenditure of the money; that the Laurentian Mountains approached the margin of the Ottawa River, with many and important tributaries to be crossed by very expensive bridges: others, while admitting a line could be had on the north side, yet asserting that it would be far less expensive on the south, even without the assistance of the land grant,—while in point of local freight to be obtained for the road, the south was infinitely preferable. Many warm friends of the enterprise, and in favour of Montreal and other Municipalities granting liberal aid, were in consequence of these misrepresentations made suspicious of its feasibility. The fact that the Montreal and Bytown Line had been located through this supposed inhospitable country, had slipped from memory. No plans of the line could be found, and your engineer had no personal knowledge of the route followed by that Company. Your Directors were aware, in the event of being unable to meet the requirements of the amended charter, to keep the line entirely within the Province of Quebec, that their land subsidy of 1,200,000 acres would be lost,—a diminution in their resources even with the full amount of contemplated municipal aid of $1,500,000, which would preclude a bond basis being established for the road, on the south side from Hawkesbury up, and so prevent its being carried out. Somewhat disheartened, but not defeated, your directors instructed their engineer, in company with one of their board, Mr. Duncan Macdonald, an experienced railway contractor, to explore the country between Grenville and Hull on the north side, also from Ottawa to Hawkesbury on the south of the Ottawa River, and report as to the comparative advantages of either side for Railway construction and traffic purposes.

The result of this exploration, which was carried on during severe weather in the depth of winter, is given in a report under date of 28th Feb., 1871. A copy of this report is handed in herewith, satisfactorily demonstrating that an excellent route can be had on the north shore. A level plateau, or rather a series of them were found to exist between the margin of the river and the base of the Laurentian Mountains, of from a quarter of a mile to fifteen miles in width,

well adapted for agriculture, as well as the location of a railway; while the enormous space of territory stretching north of this plateau and occupied by the Laurentian formation, is susceptible of cultivation to the extent of about three fifths of its area for at least one hundred miles in extent.

From the Warden, Mayors and leading inhabitants of Ottawa County, the exploration committee ascertained that the thinly settled portion extended north from the Ottawa River to an average distance of forty miles, and that along the lines of several of the rivers to a distance of from eighty to one hundred miles, settlers could be found; that in this northern region, or *terra incognita*, excellent cereals and root crops were raised; for instance, a yield of wheat had been obtained of from 13 to 17 bushels from a bushel of seed sown, the land producing of Indian corn, 25 bushels per acre, potatoes 200 bushels, coarse grains about 30 bushels, and hay two tons per acre. The population of the County of Ottawa, as given by the Census of 1860-61, was 27,757; while that of the two rival counties of Prescott and Russell, on the south side of the Ottawa, and claiming the road as offering greater inducements, was only 22,323. The preponderance of root crops, hay, cash value of farms, live stock, sawed lumber, &c., being also greatly in favour of the north side.

In addition to this, it was found that there was an actual excess of bridging on the south side to the extent of 2,350 lineal feet.

The marked difference in the financial aspects of the two routes was also pointed out, even when based on an equal estimate of cost. It may be well to draw attention to this feature at the present time, with the view of removing any doubts which may now exist in the minds of the new directors, as to the desirableness of crossing the river at Grenville, and carrying the line from thence to Ottawa on the south shore,—the same argument being applicable under the present aspect, as held good at that time. From a close inspection of the country, with other information in their possession, the committee reported the probable cost of a line between the two cities *via* Grenville, on either side of the Ottawa at $30,000 per mile, or a total of $3,600,000 for the total distance of 120 miles,—a very close approximation to the cost, as will be seen further on when the surveys are considered.

This estimate was made up as follows:

Detailed estimate of grading, land, minor bridges, permament way, &c.	$20,000	per mile.
Rolling stock	4,000	" "
Three large Bridges over Ottawa and branches, $240,000 or	2,000	" "
Extra work at Mile End and Montreal Harbor, $72,000 or	600	" "
Superintendence and Contingencies, the usual allowance of 10 per cent	2,600	" "
Depreciation or discount on municipal Stock, &c	800	" "
	30,000	

I cannot do better in this connection than to make the following extract, found on page five, of the printed report of the exploration alluded to.

"To assist in arriving at a decision as to which of the routes should be adopted, in view of monetary considerations, the following figures are submitted.

First. Line from Montreal to Ottawa City, *via* North Shore, distance 120 miles.		
Total Cost as above		$3,600,000
To meet this expenditure the company will have the land grant of 1,200,000 acres, worth, say $1 per acre	$1,200,000	
Montreal Municipal Grant	1,000,000	
Municipal grants of intervening counties	500,000	$2,700,000
Leaving amount required to be raised by private subscriptions for Stock and sale of Bonds		$ 900,000
Second. Line from Montreal to Ottawa City *via* south shore, distance 120 miles.		
Total Cost as before		$3,600,000
To meet this expenditure the Company would have:		
Montreal Municipal Grant as before	$1,000,000	
Municipal Grant of intervening counties as before	500,000	
Assumed Maximum aid from Ontario Government of $4,000 per mile for 60 miles	240,000	$1,740,000
Leaving amount to be raised by private subscriptions for Stock and sale of Bonds		$1,860,000

The company will therefore be in the following financial position:

North Shore Line, Amount required to be raised from private sources.	$900,000
South Shore Line, Amount required to be raised from private sources	$1,860,000

"From this comparison it is evident that the northern rival carries off the palm in the financial interests of the Company to the extent of $960,000, an amount sufficiently great to turn the scale in its favour, even apart from the considerations which make it still more to preponderate.

"In explanation of the foregoing values given to the Government grants of the Provinces of Quebec and Ontario we may observe that in the opinion of many well-informed persons, the money value we have attached to the land granted by the Province of Quebec is far within the mark. Various values have been assigned by the parties in question, varying from $2,000,000 to $46,000,000, basing their opinions on the valuable timber limits, mining properties, &c., covered by the land itself. We have endeavoured, in making this comparison, to keep safely within reasonable limits, and think our estimate a fair one. The greater portion of the land is at present inaccessible to settlers, and must continue so for some years to come; it cannot, therefore, at present be sold for anything like its intrinsic value, but if the company by municipal and private aid can raise the

greater portion of the amount required to construct the road, the land will eventually, no doubt, become of greater value, and furnish good collateral security to the municipal and private stock-holders in addition to the actual railway itself, of which they will be the proprietors.

"We presume the most enthusiastic friends of the scheme do not anticipate very large direct returns on the investment, beyond the working expenses, at least while the work continues in its present proportions, terminating at Ottawa, or Aylmer.

"A union with the Canada Central, and by this means an extension westward along the Ottawa Valley, crossing at the Sault Ste. Marie, and forming a junction with the American Northern Pacific Road, now in course of construction, will reduce the distance of the overland railway route from Pacific to Atlantic Oceans, between 400 and 500 miles over the shortest existing American line.

"With this connection effected at an early date, and it has already strongly recommended itself to the promoters of the great Pacific line, the enormous traffic east or west will flow over our link in the chain, and rich returns follow, or the line be leased at a figure which will furnish a good percentage on the first cost, the municipal and other stockholders also retaining their interest in the remaining portion of land grant, assuming that we have not estimated its value sufficiently high, and that it will not all be required to aid in the first construction of the road. It will thus be seen that, apart from the immense indirect advantages and profits to be derived by the city of Montreal, and the intervening municipalities traversed by and bordering on the Railway, a great direct value may attach itself to their investment before many years.

"In reference to the aid supposed to be given by the Ontario government to that section of the road within the Province of Ontario, we have taken the most liberal view possible in favour of the financial grant to the South Shore line.

"The act of the Ontario Legislature, passed last session of Parliament, authorizes the Lieutenant-Governor in Council to grant aid in construction of Railways to the extent of $1,500,000.

"The amount of aid so extended is not to be 'less than $2,000, 'nor more than $4,000 per mile, and in favour of lines leading to, 'or through sections of the country remote from existing thorough-'fares, or passing through thinly settled tracts, or leading to the 'Free Grant Territory, or to the inland waters.'

"Whether the section of the country traversed by the proposed line in the counties of Prescott and Russell will come under the

above conditions of the act is doubtful; or, if the right to the grant be decided affirmatively by the Ontario government, whether these two old settled and comparatively wealthy counties will be entitled to more than the *minimum* amount of $2,000 per mile is still more uncertain. We have however given the line in our estimate, the benefit of the maximum sum of $4,000 per mile."

Since the foregoing was written, the conditions of the question as to a grant from Ontario to the line from Hawkesbury to Ottawa on the south side have been determined, and in a manner adverse to its claims. The Executive Government of that Province, have promised aid to a parallel line some twenty miles south, known as "The Montreal and City of Ottawa Junction Railway," leaving the Grand Trunk line near the Coteau Landing Station and running centrally along the Peninsula formed by the Ottawa and St. Lawrence Rivers to the capital. The probability of the gift being repeated to a contiguous line following the navigable water, is so slight that we may dismiss it from consideration and predicate the comparison accordingly.

"In this aspect of the question the rival routes, north and south of the Ottawa from Grenville up, will stand on the following financial basis, assuming, which may safely be done, that the relative costs will be nearly equal, and that a similar municipal aid would be given to each.

1st. Montreal to Ottawa *via* Grenville on North shore.—Approximate cost	$3,600,000
Deduct as before, value of Land Grant and Municipal aid	2,700,000
Amount to be raised on Stock and Bonds	$900,000
2nd. Montreal to Ottawa, *via* Grenville, Hawkesbury, and from thence along south shore.—Approximate cost	$3,600,000
Municipal aid from Montreal and other Municipalities, as before	1,500,000
	$2,100.000

From these figures it will be seen that there is a difference in the amounts to be raised on bonds, &c., of $1,200,000; which it is thought will effectually settle the question in favour of the north shore from Grenville up."

It is scarcely necessary to advert in detail to the scheme also advocated, of carrying the south shore route from Hawkesbury to Vaudreuil, uniting at the latter point with the Grand Trunk Railway, and from thence reaching Montreal by that line. As this project has however been advocated, and received some attention, it may be well to devote a few lines to its consideration, before taking leave of the south shore. The total length of line to be actually built, from Ottawa to Vaudreuil, amounts to 95 miles, making a total distance from Ottawa to Montreal

of 119 miles, or but half a mile less than the ascertained distance between the same points, *via* the "Northern Colonization" independent route.

1st. The estimated cost may be placed as follows: 95 miles @ $20,000 (per Starke's estimate)	$1,900,000
Extra rail from Vaudreuil to Montreal	74,000
Rolling Stock—119 miles @ $4,000 per mile	476,000
Station accommodation, shops, &c., &c., same as for M. N. C. Railway.	170,000
Total amount to be raised on Stock and Bonds	$2,620,000
2nd. Cost of grading, &c., N. C. Ry. as determined	$2,770,926
Rolling stock say, 120 miles @ 4,000	480,000
Station buildings and equipment	170,000
	$3,420,926
Say	3,420,000
From this deduct estimated value of Land Grant	1,200,000
Balance	$2,220,000

Showing that in the event of any company having to choose between the two lines for construction, that there would actually be an extra or surplus sum of $400,000 to be raised in stock or bonds to build the so called short and cheap Vaudreuil Railway. In view of this difference, the company, from a purely financial point of view would select the Northern Colonization Railway, even with its 24½ miles extra to build, including the much talked of expensive bridges over the Ottawa and its branches. Apart, however, from such a consideration, even were the financial balance adverse to the "Northern Colonization", Montreal and the Province of Quebec demand it as an independent main trunk line for connecting the trade of the Ottawa valley, and the great through traffic of the west, with the city, as well as for opening up and colonizing the north-western portion of the Province of Quebec, results which manifestly could not be attained by adopting the proposed Vaudreuil and Ottawa route, following the Grand Trunk Railway and running principally through the Province of Ontario.

Enough has therefore been advanced to show the fallacy of the arguments of parties desirous of carrying the Northern Colonization line into Ontario at Grenville and Hawkesbury, or of effecting a union with the city of Ottawa by the so called short and cheap route *via* Vaudreuil. This part of the question may therefore be taken leave of.

I now come to the more particular consideration of the precise location of your line between Montreal and Grenville—a problem surrounded with considerable difficulty owing to the local rivalries of villages, and the strong efforts made by different localities to obtain

the line, difficulties which are rather increased from the fact that between the many routes suggested, there exists but little variation in relative cost of construction or in distances. From Grenville to Ottawa the subject is not attended with like trouble, but little difference of opinion existing as to the general course of the line.

In determining this knotty question, the Engineer has to keep aloof from all local influences, and endeavour to obtain a solution which, while yielding the maximum amount of benefit to the largest number of inhabitants, will at the same time consult the interests of the railway company in reference to cost of construction and efficiency of working the traffic over the cheapest and most direct route, keeping prominently in view at the same time the selection of a line which will comply to the greatest possible extent, with the colonization requirements of the Quebec Government. Governed by such principles, your Engineer approaches the task, and while failing perhaps to satisfy some, will, he hopes, convince the majority of the justness of his views.

By reference to an accompanying map, drawn on a scale of two miles to an inch, the country between Montreal and Grenville will be seen. On this is delineated the various lines advocated between those two points, which may be described as follows :

No. 1. Montreal *via* Vinet's Bridge, St. Martin, St. Eustache, Belle Rivière, St. Andrews, Carillon to Grenville, Sykes' survey,—distance of ..... 59¼ miles.
No. 2. Montreal *via* Vinet's Bridge, St. Therese, St. Jerome, Lachute to Grenville, about ..... 65¼ "
No. 3. Montreal *via* Vinet's Bridge, St. Therese, St. Andrews, Carillon to Grenville, about ..... 59½ "
No 4 Montreal *via* Vinet's Bridge, St. Therese, Lachute to Grenville about 57 "

In determining the distance from Montreal (at Hochelaga) to St. Therese, as adopted in the foregoing statement, Line No. 4, of the table on page 5, of lengths of routes between Montreal and St. Jerome, has been followed as the most direct and cheapest route, measuring 17 miles. The length of branch road from St. Therese to St. Jerome, which will be considered separately, is about 13.36, miles.

As has already been observed, prior to the project having reached its present importance as a main through line, or a link in the inter-oceanic route, I favoured carrying the main line *via* St. Jerome, as indicated in No. 2, of the table, in order to save the extra expense of constructing the branch from St. Therese to St. Jerome, and its future independent traffic working. Its extra length of eight and one-third miles over a rival line will reluctantly force its ruling out, when through traffic considerations are taken into account.

The adoption of Line No. 1 will increase the length of the colonization branch direct from St. Eustache to St. Jerome, nearly

3½ miles additional to that from St. Therese to St. Jerome, or an increased distance from St. Jerome to Montreal for traffic to flow over of nearly 5⅓ miles.

This extra distance for all the freight in cordwood, lumber, agricultural products, and manufactured articles, which may reasonably be expected from the St. Jerome district, and eventually from the immense colonization region drained by the North River, will operate against the adoption of Route No. 1, *via* St. Eustache.

From a careful examination of the plans and profiles of the Sykes' survey, *via* St. Eustache, and comparing the same with the results arrived at from your surveys *via* St. Therese, very little difference is found in cost of construction per mile, by either route, as both lines follow the same course from Montreal to the Back River.

Even if all things were equal in the rival lines, it would appear to be judicious to select that which is most remote from the navigable Ottawa, or farthest in the interior of the country.

Let us now proceed to an examination of the country between St. Therese and Grenville, on lines Nos. 3 and 4.

Assuming that the ground to be passed over by line No. 4 *via* Lachute, is similar in its features to that traversed by line No. 3 *via* St. Andrews, with the same proportion of curvature, line No. 4 is some 2½ miles shorter than its competitor, which has, however, 10⅓ miles less of road actually to be built, owing to the possible adoption of the Carillon and Grenville section, 13 miles in length, now in operation.

To assist in arriving at a more satisfactory conclusion, it may be well to give the results obtained from the surveys made by Sykes, De Bergue & Co., and those of your own engineer. The detailed estimates upon which the conclusions are based will be found on separate sheets, the aggregate amounts alone being given here.

From these detailed calculations you will ascertain that the cost of the first section of the main line, Hochelaga to St. Therese, a distance of 17 miles, will amount to $528,902, or at the rate of $31,-112 per mile. In this sum is embraced a sufficient amount to lower or ease the grades leading up to Côte à Barron from the north, and descending from that place to the Harbour.

These grades, as originally adopted were intended for a cheap wooden railway, with the heavy freight running principally in one direction. Viewed as an iron railway, with heavy traffic in both directions these original grades will have to be modified.

The second section from St. Therese to Carillon follows the line of the Sykes survey from Belle Rivière to Carillon with a similar country to be passed over from St. Therese to Belle Rivière, the total distance being 29½ miles and the cost $506,495, or $17,169 per mile.

Section No. 3 from Carillon to Grenville was built by Messrs. Sykes, De Bergue & Co. From the profile of this part of the line, it is estimated to have cost $248,853, or at the rate of $19,142 per mile. The rolling stock, station houses, &c., have not been embraced in this estimate, as the first will not be applicable to our gauge.

Section No. 4. From Grenville to Ottawa, a distance of 60 miles the estimated cost, as derived from sections and personal examinations of the country, may be placed at $1,486,676, or at the rate of $24,778 per mile.

Abstracting these various sums we have the following result as the probable cost of the main line from Hochelaga to Ottawa:

Section No. 1.	17	miles	$528,902	or	$31.112	per mile.
" 2.	29½	"	506,495	"	17,169	"
" 3.	13	"	248,853	"	19,142	"
" 4.	60	"	1,486,676	"	24,778	"
Total.....	119½		$2,770,926	"	23,104	"

The above figures are predicated on a 4 feet 8½ inches gauge road, with embankments fifteen feet wide on top and slope of 1½ to 1, and also that your company can construct a new road from Carrilon to Grenville, at a similar cost to that estimated for the section already built; thought in fact if that route be decided upon, the existing line could be acquired at a considerable reduction upon its cost. The land taken for the line will be 80 feet, or of sufficient width for a double track, when the same becomes necessary: the bridges are built with massive stone abutments and piers, and the superstructure of wood on the arch and truss principle combined. The permanent way will be of iron, 60lbs to the yard, and fish plated, or considerably heavier than the rails of narrow gauge roads generally. An allowance of ten per cent of the entire distance has been made for sidings.

It may be well to observe here that the grades laid down by Sykes, De Bergue & Co., from Belle Rivière to Ottawa, and which you will see on the sections submitted herewith, have been, in my estimate raised two feet in order to keep the track above the snow level. The necessity of elevated grades above the natural surface of the ground in passing over a level country, subject to heavy falls of snow, will be obvious, and therefore the improvement will doubtless commend itself to your favour. A considerable amount of curvature

between Grenville and Ottawa can also be dispensed with, and in many places easier curves introduced.

The maximum grade will not exceed that of the Grand Trunk Railway or 52.80 ft. per mile. From St. Thérèse to Ottawa the grades as a rule are very light, in fact to a great extent level.

To the previous amount of $2,770,926 must be added an additional sum for rolling stock and equipment. For the first item the sum of $4,000 per mile, or say $480,000, may be assumed, and for the latter about $170,000, being for the erection of station houses at Montreal and Ottawa, with suitable buildings for ten intermediate stations, embracing freight and woodsheds, engine and erecting shops, station ground, &c., making a grand total for cost of main line and equipment of $3,420,926.

If line No. 4 is adopted, *viâ* Lachute, the following may be an exhibit of its cost:

Section No. 1.....	17	miles as before	$528 902	or	$31,112	per mile
Sections No. 2 & 3.	27	"	463,543	"	17,169	"
St. Thérèse *viâ* Lachute to Grenville	say 13	"	248,846	"	19,142	"
Section No. 4	60	" as before	1,486,676	"	24,478	"
Total....	117		$2,727,967		$23,315	per mile.
To this add for rolling stock	117 miles x $4000.		468,000			
Equipment as before.....			170,000			
			$3,365,967			

as the estimate for line No. 4, or a saving of $54,959 in cost and 2½ miles in distance over line No. 3.

This difference is of course based on the assumption that a line can be had from St. Thérèse *viâ* Lachute at the same rate per mile as the known cost of the one *viâ* Carillon, and that the Carillon and Grenville Railway Co. would demand as much for their distance of 13 miles, as it would cost your company to build a similar length of road. This is a point which can only be accurately decided by a survey of the country between St. Thérèse, Lachute and Grenville, when if a good route can be found as favourable, or more so, than *viâ* Carillon, the effect would be to cause a decrease in the probable demands of the Carillon and Grenville Railway company, as their property would be of considerably less value with the main railway carrying the through passenger and freight traffic past it, on a parallel line within a few miles.

In the original location of the Sykes' line, or No. 1, at St. Andrew's, the distance could have been considerably shortened by striking north of that village, in place of following the circuitous route

on the south side, along the margin of the river. If the configuration of the ground permit of the location without much extra expense, the road should follow this new route, to effect the saving in distance. A narrow gauge branch line could be extended from a suitable point on the main line near St. Andrew's, to Lachute, connecting that growing village, with its great water power, and fine agricultural country, with the railway. On the other hand, if line No. 4 *via* Lachute is selected, a similar narrow-gauge branch could be constructed to St. Andrew's, and connect its large local trade with the main railway. St. Eustache could also be joined to the main line by similar means. The gauge for those minor branches need not exceed three feet. They may be constructed and worked at a remarkably cheap rate, and prove of great utility to the surrounding country as well as to your road.

While leaving this part of the problem in rather an unsettled condition, enough has been gleaned to indicate pretty accurately the cost of the railway to Ottawa, or a sum not exceeding $3,420,926. If a saving can be made in this amount by taking the route *viâ* Lachute, and at the same time shortening the distance, so much the better.

It will be seen on reference to page 4, that the contract price with Sykes, DeBergue & Co., for a railway between the same points, and for an equal length of line, amounted to $4,020,750, or about $600,000 in excess of your engineer's estimate for the Montreal Northern Colonization Railway.

It is true the Montreal and Bytown Railway was commenced as a wide gauge road, or 5 feet 6 inches, while yours is 4 feet 8½ inches gauge, but your grades are on an average two feet higher, while iron now costs over 50 per cent additional to what it did at that time, with also nearly the same advance in labour. In the face of this, the fact that your company will give a line, superior in point of grades, curvature, rolling stock, and station accommodation, for $600,000 less than the original contractors, must be satisfactory to the citizens of Montreal and the inhabitants of the country generally, as it will effectually remove any impression which may have been formed as to the improper expenditure of the municipal grants in aid of the construction.

Closely allied with this main line, the interests of the city, the back country, and colonization purposes generally, is the branch road to St. Jerome, and eventually from thence along the course of the North River into the interior, with possibly an extension in an easterly direction towards New Glasgow, opening up and developing that section of the country, and connecting the same with this city. A

charter has also lately been granted for a railway up the valley of the Gatineau for a distance of one hundred miles. This road when built, will prove an efficient feeder to your main line, and also act as a most useful instrument for colonizing that portion of the Province. Similar lines branching from your road and extending up the valleys of the Lièvre, Nation, Rouge, and other rivers on the north shore, will doubtless follow in due time and perform like functions. In the mean time we will consider the most important of these subsidiary lines, that to St. Jerome.

Taking its point of departure from the main track near St. Thérèse, the branch follows a north-easterly course over a level country to the village of St. Janvier, and afterwards over a slightly rolling country to the village of St. Jerome, a distance from St. Thérèse of $13\frac{33}{100}$ miles, or $30\frac{36}{100}$ from Montreal. the detailed estimated cost being $224,561, or, with a proper proportion of rolling stock and equipment added, a total sum of $254,561, being at the rate of $19,054 per mile including rolling stock, &c.

St. Jerome, a flourishing village containing a population of about 1200 souls, is situated on the North River, at the outlet of the gorge through the Laurentian Hills made by that river, down which a large number of inhabitants from the rear parishes seek egress to market. The village lies in the midst of a fine agricultural country, and with an almost unlimited supply of water power in the neighbourhood.

Here it may be well to offer a few remarks on this power in consequence of the intimate relation which exists between its profitable employment, and the construction of the railway. The North River which furnishes it, takes its rise in several large lakes in the interior of the country, draining a vast extent of territory, and flowing in a southerly direction to St. Jerome, where it turns suddenly, and runs in a south westerly direction, discharging into the Ottawa near St. Andrew's. At the village of St. Jerome and for the distance of six miles, there is a fall of three hundred and five feet, divided over that space by a succession of cascades or currents, and developing a power of 120,000 horses at the lowest stage of the water in a dry season, or about twelve times as much as exists at the City of Lowell in the United States. This power is repeated to a considerable extent further down the river, at the village of Lachute, and again to a smaller extent at St. Andrew's.

In all my experience as an hydraulic engineer I have never seen a more favourable locality for employing the water by a succession of dams at different points along the river, thus causing it to repeat its useful effects at least a dozen times within the distance of six miles. The bed of the river, in many places, is of rock, with adjoining

banks admirably adapted for the efficient distribution of the power in mills and factories.

Passing along the beautiful banks of this river, and stopping from time to time to examine points for factories and mills, which would give joy to the manufacturer's heart, and which, by the expenditure of a few hundred dollars, could be converted into splendid mill sites; with the undulating fine agricultural country stretching off to the south, east and west, flanked on the north by the Laurentian mountains with their undeveloped mineral wealth, the spectator would be deeply impressed with the facilities given by Providence for turning the natural riches of this region into means of support for the teeming population yet destined to occupy so favoured a section of the country. The writer himself could well sympathize with the enthusiasm of the Rev. Mr. Labelle, the esteemed Curé of the Parish, who for years past has devoted his untiring energy to the development and useful employment of this great motive power for the good of his fellow-countrymen. Who will not wish success to his efforts, and at the same time extend the aid necessary for the purpose, simply in the construction of this branch road, more especially when in doing so the city of Montreal and northern parishes will reap so great a reward in this, as in other respects to be presently alluded to?

An elaborate survey of the river at this point has been made, and the entire plan of water power arranged and reported on. The report, accompanied by lithographic plans has been widely distributed through Canada, Great Britain and the United States, with the view of drawing the attention of manufacturers and capitalists to the great advantages offered for the investment and employment of capital. The success of this second enterprise depends in a great measure on the carrying out of the railway scheme as a preliminary; without it no outlet can be had, or adequate market obtained for the products of the power utilized.

At the present time a fractional amount of the power is usefully employed at St. Jerome, but its results are confined principally to the locality.

There are now in operation two grist mills with ten runs of stones, two saw mills, one shingle factory, one carding mill, and a cloth factory, turning out two hundred yards of tweed daily. If brought within two hours of the Montreal markets, how soon would all this be augmented! Montreal becoming the Boston, and St. Jerome the Lowell of the Dominion.

The level of the North River, near St. Jerome, being more

than three hundred feet above the surface of the ground at Mile End, water could be conveyed by gravitation in pipes to Montreal, following the line of the railway and carried over the intervening rivers on the railway bridges. This plan of obtaining a large supply of pure and wholesome water for the use of the city by gravitation should commend itself to the notice of the corporation, and if found practicable and economical should receive their best attention with the view of having it carried out.

One of the most pressing requirements of the city at the present, and for all future time, is a supply of fuel at the cheapest rate. This important subject will now be briefly discussed, and it is hoped with the result of indicating a method of obtaining a cheap supply of cord wood to the consumer in the city, simultaneously with an advanced price to the producer in the country.

For several years past the price of this necessary article has ranged from six to eight dollars per cord, and as high as twelve dollars during the present winter. The annual consumption of the city must be over 200,000 cords, brought principally by water conveyance, and every succeeding year increasing both in cost and quantity.

At St. Jerome the present price is one dollar per cord, and at St. Sauveur, but seventy five cents.

As some interest will be felt in learning the enormous quantity which will be available for many years to come in this district of the Province, the following statement furnished by reliable authority is given. In the country of Terrebonne, to the north of St. Jerome, there are 693,300 acres of bush, chiefly hard wood. In the County of Argenteuil, contiguous to Terrebonne, and within 20 miles of St. Jerome, there are 451,000 acres of hard wood, together with some 21,000 acres of timber land in the parishes of St. Canut and St. Columb[illegible] addition to this there is an almost endless extent of [illegible] territory lying north and east of St. Jerome, which produc[illegible] usual quality of wood. For the present it will serve the purp[illegible] state the quantity which the foregoing aggregate of 1,165,300 acres will yield.

At, say 40 cords to the acre, it will amount to the enormous sum of 46,612,000 cords, capable of supplying the city with its present consumption of 200,000 cords per annum for 233 years, a statement which will no doubt give pleasure to those people who may be fearful of the total consumption in a few years of the fuel of the country, more especially when it exists at the same time within easy and cheap haul.

In the townships of Wexford, Doncaster, Carrick, and so on north, there is reported to be abundance of good Pine timber.

At the present time all this natural wealth of the country is useless, in fact a nuisance, or positive loss to the settler, from the additional labour it necessitates in clearing up his farm, over the prairie land of the west. Without railway or water transportation to give it a money value, this heavy bulky article cannot be profitably taken to market a distance of twenty-five or thirty miles, neither will its only product, pot-ashes, obtained at heavy cost and great consumption of fuel, pay for the time and expense of making and transporting over a long rough road. On the other hand, the high price of fire-wood in the city, ever on the increase, now renders this prime necessity a very serious item in the cost of living, bearing especially with great heaviness on the poorer classes. With the railway in operation the whole subject is reversed by practically bringing the points of demand and supply together, and thus more nearly equalizing the two. The new settler at once obtains a proper remuneration for the labour of felling the timber, (his first crop), and in this manner maintains his family during the time the clearing is in progress, soon rendering his land fit for cultivation, and self-supporting. The market and money brought to his door for the wood applies also to the agricultural products of his farm, and with ordinary industry, a few years will find him in comfortable circumstances. The railway will tend, more than any other means which can be adopted, to the rapid colonization of our wild lands, and so both keep the native population in the country, and incite immigration. Without the railway and its attendant advantages the backwoods settler has but a life long struggle with poverty and toil, and frequently succumbs at an early age in the hand to mouth conflict for subsistence, or leaves the country in disgust for the prairie lands of the west.

Through reliable information I am led to believe that, by the construction of a lock at an expense of $5000, that river would be made navigable for wood scows for a distance of six leagues above St. Jerome and into the very heart of the wood producing country. This being the case, the water with this small outlay, would become a practical extension of the railway to a further distance of eighteen miles and thus act as an efficient feeder.

Supposing the railway in operation it would not be too much to assume that at least one half the wood now required by Montreal could be furnished by it, or say 100,000 cords per annum.

The average price at the point of supply would probably soon double, or reach two dollars per cord, to this add two dollars as the cost of transport and profit to the railway company, and an additional dollar for profit to the wood merchant and to cover contingencies. The total cost of the wood delivered at Montreal, would thus

reach but five dollars per cord. By this yearly transaction, in the one item $200,000 have been paid out to the farmers or at least $100,000 a year more than they now obtain, supposing that they had a market for this quantity, which they have not: the railway company has obtained $200,000 freight, or a clear gain of about $40,000 over and above actual cost of transport: the wood merchant has made a large profit, and, taking the present average price of wood to the consumer $8 per cord, the citizens of Montreal have saved $300,000 in one year, or an amount sufficiently great to repay them their bonus of $1,000,000 in a little over three years. This result at first sight is rather startling but the more closely the subject is examined, the more clearly will its truth appear.

With this brief reference to the St. Jerome road, the entire cost of the various main lines in connection with the branch will now be laid before you in a condensed form.

1st. Main line *via* St. Therese, Carillon and Grenville to Ottawa.....	$3,420,926
Branch to St. Jerome.....	254,561
Total distance of 132.86 miles at a cost of.....	$3,675,487
2nd. Main line *via* St. Therese, Lachute and Grenville to Ottawa.....	$3,365,967
Branch to St. Jerome.....	254,561
Total approximate distance of 130.36 miles at a cost of.....	$3,620,568
3rd. Main line *via* St. Therese, St. Jerome, Lachute and Grenville to Ottawa.	
Approximate estimate.....	$3,606,509
Total distance 125.35 miles.	

The entire cost of the route No. 3 is in its favour when compared with either of the other two, but it is ruled out in consequence of its extra length of $8\frac{1}{3}$ miles of main line as before stated; the estimate for No. 2 is to a certain extent provisional, it will therefore be more prudent to assume the larger sum of $3,675,487 or cost of No. 1 line *viâ* St. Therese and St. Andrew's, as the basis of our future calculations.

We will now endeavour to ascertain the probable amount of assistance from municipal aid and the revenue to be derived from traffic returns.

The principle of aiding the construction of railways by governmental and municipal gifts or bonuses is now adopted in parts of Canada and the United States. Owing to this wise policy we see the Province of Ontario and the neighbouring States covered with a net-work of this great system of communication.

In a thinly settled country like ours, with comparatively a light freight and passenger traffic, and heavy running expenses

during the winter season, it cannot be expected that the net returns would be sufficiently great to warrant private capital being embarked in the construction of roads to the full extent of their cost. If, however, from one-half to two-thirds is assumed by the public, the balance can be obtained and capitalists prevailed on to furnish the amount, with good security for a moderate return. In this spirit the grant of land, &c., from the local government has been made to assist in the construction of the road to open up the country. That the portion to be furnished by the municipalities will not be lost, but on the contrary placed in a position to yield a rich harvest to the donors, we will now show.

This has already been partly illustrated in the case of Montreal, which will be recouped for its grant of $1,000,000 in the short space of three years, from traffic in the single item of firewood.

In addition to this we will take a country municipality, say the County of Ottawa, through which the railway passes. The assistance promised by this section amounts to $200,000.

The length of road to be constructed in Ottawa County is about fifty miles, and will cost in grading and other expenses, independently of iron rails, and rolling stock, in the neighbourhood of $12,000 per mile, or a total of $600,000, to be paid out in the form of wages, and distributed amongst the inhabitants.

It will thus be seen that the municipality will receive back the $200,000 given, together with $400,000 additional, and have the railway with all its attending advantages to the good.

The like results will apply proportionally to other municipalities.

To attempt a description of these advantages on this occasion would be almost like a reflection on the intelligence of the people. I may be permitted, however, to glance very briefly at some of the leading points in this connection, and leave the inhabitants to supply the remainder from their own personal knowledge.

If a few of the principal products of the country, such, for instance, as grain, hay, wood and lumber are taken, we find by the present means of transport that it costs as much to bring a bushel of grain from St. Jerome to Montreal, a distance of 30 miles, as from Chicago to the same place, a distance of 1,200 miles.

Transported by rail a saving of eight cents per bushel could be made and divided between the producer and consumer. It costs $4 per ton to draw hay twenty miles over ordinary roads, and with a selling price at from $12 to $16 per ton in the city it will not pay to draw it more than that distance. By rail it can be moved as far for $1, a saving of $3 a ton to the farmer.

The distance from market at which most of the inhabitants in this section of the country live, renders the growth and selling of hay beyond that required for home use, unprofitable.

Hard wood cannot be drawn more than twenty miles at a cost of $2.25 per cord. It can be transported that distance by rail for $1, and proportionally for longer distances.

It costs $4 to draw sawed pine lumber twenty miles and $8 for hard wood lumber for each thousand feet board measure. By rail, pine may be carried that distance for 30 cents, and hard wood lumber for about 50 cents per thousand, the difference in rates of course going to the producer and consumer.

If the railway is built, not only will many steam saw mills come into operation along the line, and greatly increased quantities of pine, hemlock and bass wood lumber be manufactured at more profit, but in addition we shall have maple, oak, ash, elm and other descriptions of lumber, seeking markets from which they are now excluded, owing to cost of transport by ordinary means.

The foregoing remarks will apply equally to every product of the farm, forest and mine, sent to market, such as cereals, root crops, cheese, butter, milk, pork, flour, cattle, bark, staves, hoops, iron ore, plumbago, &c., and also to the merchandise brought into the Townships and Parishes.

The passage of the first train along the line will at once double the value of real estate for ten miles on each side, and proportionally less for greater accessible distances. The beautiful banks of the North River in the neighborhood of St. Jerome, and the sylvan spots of the Rivière des Mille Isles, Rivière des Prairies, and the Ottawa, would soon be studded by villas and summer residences, with easy access to and from Montreal and Ottawa, rendered possible by the railway. The picturesque mountains, lakes, and glens of the Laurentides would attract thousands of tourists, and rival the far famed White Mountains in the attractions they would present.

Reference has now more particularly to be made to one of the leading items of through traffic for the road, and it will be my endeavour to place the subject in a clear and concise manner before you, and also before the gentlemen interested in the lumber trade of the Ottawa and its tributaries. (These views have lately been advanced in a report on another proposed railway, but they are equally applicable to the line now under consideration.)

From reliable statistics it is ascertained that the lumber annually cut at Ottawa, and the neighbouring town of Hull, amounts to the enormous quantity of 240,000,000 feet, or taking the city of Ottawa,

Hull, the Gatineau and various points along the north shore to Grenville, 303,000,000 feet.

Of this first quantity it is stated that at least 190,000,000 feet are sent to the United States market, heretofore principally by water *via* Montreal, Sorel and Chambly Canal to Burlington, Whitehall and Albany, as principal distributing marts for the inland cities ond towns of that country. Latterly a portion of this transport has been preformed by the St. Lawrence and Ottawa Railway, transhipping, or rather ferrying its loaded cars at Prescott to the Ogdensburg Northern Road, and by this route reaching Burlington, and other New England Cities.

If, for your route, prior to the erection of a second bridge over the St. Lawrence, the cars are ferried to Longueuil, and placed on the rails of the proposed "Montreal, Chambly and St Johns Railway," connecting with the "Montreal and Vermont Junction" line in the neighbourhood of St. Johns, a road independent of the Grand Trunk Railway will be obtained to the New England States and Eastern seaboard.

The length of this new line, actually to be built, to carry out this design, will not exceed twenty-five miles over a level and cleared country.

The following table will give the lengths of rival routes between the lumber producing Ottawa City and the common distributing point, Burlington.

1st.	Distance by water *via* Chambly Canal	310	miles.
2nd.	" " rail *via* Prescott and Ogdensburg	230	"
3rd.	" " " Montreal and Ottawa City Junction	213	"
4th.	" " " Montreal Northern Colonization, Hochelaga, and Vermont Junction Road	217½	"

From this you will see that, for all practical purposes, your road is about equal to the shortest competing route, and if 2½ miles can be saved by adopting the Lachute line, it will be reduced to only two miles more than the proposed "Montreal, and City of Ottawa Junction Railway."

Running side by side for the same distance and under like conditions of loading and unloading, railway transport cannot compete with that by water for a bulky article like lumber. In the present instance however the distances and conditions are so dissimilar that the rail leads the way both in time and cost.

As before stated, Burlington has hitherto been the distributing point for the New England States, while Albany and Troy have performed like functions for the State of New York and those to the south.

At Burlington the lumber passes from the barges into the yards of the "middle man," or person who sells it on commission, and in due time it is sent by rail to its ultimate destination. In passing through this stage of its history, the lumber is subjected to a charge of from 20 to 25 cents per thousand for transhipment, or with the commission on sales to about $2 per thousand in all.

This practice of retailing, or selling through a middle man at Burlington, Albany, &c., dates from the early history of the trade, and has no doubt been continued in consequence of the water transportation terminating at those points.

With a much shorter rail route, and consequently cheaper and more speedy transport inaugurated, it does not follow that the system of middle men should be continued, or at least, not nearly to the same extent. Ottawa, Hull, the Gatineau, Buckingham, North Nation, Thurso, and other great lumber manufacturing points should assume the position of distributing as well as producing points.

In other words, those places should ship direct to every city, town and village in the United States, where rail connection can be had, and where the Ottawa lumber is required.

The difference of $2, or the charge of the middle man, would then pass into the pockets of the producer, or perhaps be divided about equally between him and the consumer, a result certainly more satisfactory to those parties than the present arrangement.

To illustrate this more fully the following comparison is made, showing the cost of transport by the various routes. For this purpose we will assume the city of Boston to be the point reached in each case, and that the lumber passes through without the intervention of the Burlington middle man, and is sold at Boston on commission.

1st.	Cost of transport by water *via* Chambly Canal to Burlington - - - - - - - - - -	$3.00	per thousand
	Transhipping from barges to cars at Burlington. - -	.20	" "
	Transport from Burlington to Boston ($5.50 U. S. currency, @ 13 per cent discount. - - - - - - - -	4.35	" "
	Total cost for distance of 544 miles. - - - - - - -	7.55	" "
2nd.	Cost of transport by rail *via* Prescott and Burlington, $8.40, U. S. currency, @ 13 per cent. discount, including ferrying of cars at Ogdensburg, for a distance of 464 miles.	$7.31	" "
3rd.	Cost of transport by proposed Montreal and City of Ottawa Junction line, for a distance of 447 miles. - -	$7.00	" "
4th.	Cost of transport by Montreal Northern Colonization line *via* St. Johns and including ferrying of cars at Hochelaga, for a distance of 451½ miles - - - - - - - - - -	$7.07	" "

Showing a saving by your line of $0.48 cents per thousand over

the water route, $0.24 cents per thousand over the Prescott line, and but $0.07 cents per thousand in excess of its most successful rival.

The same relative differences will obtain if any inland city or town be taken, with Burlington as a water termination.

The saving in time from Ottawa to Burlington will be, at the least, two-thirds in favour of the rail, and open the year round, when your bridge is built; while by water transport, *via* the Chambly Canal, for six months, the navigation is closed.

If we now assume that the 190,000,000 of feet are transported by your road, the saving to the trade over the water route will be 190,000,000 feet @ $0.48 per thousand feet equal to $91.200 per annum.

If a new system of purchase be introduced, with Ottawa, Hull, Gatineau, Buckingham, &c., as the selling and distributing points, and orders with remittances sent direct from the localities requiring the lumber, the following will be the profit to the producer over the old system, or the cost of transhipping and commission at Burlington.

190,000,000 feet @ $2 per 1000 is equal to $380,000 per annum, being an amount sufficiently great to entirely build and equip your road in less than ten years, which sum would be saved to the trade of the country in this single item of traffic.

It is probable however that this new system may not come into operation in its full extent for a time and that we may only look for a partial realization of it for some years to come. Still if it reached about half way, or a saving, say of $200,000 per annum, it will be stopping a huge leak in the cost of the traffic, and adding largely to the wealth of our country.

In the last few years, an extensive trade in sawed lumber has come into existence with South America, the Southern States of America, and even with Australia.

I have been favoured by the politeness of the Hon. John Young, President of the Board of Trade, with the following figures, giving the yearly increase in this branch of commerce from the Port of Montreal alone :—

Shipments during the year	1867, 718,116	feet
" " " "	1868, 6,407,634	"
" " " "	1869, 13,806,276	"
" " " "	1870, 24,998,914	"

From Ottawa to Montreal lumber can be transported more cheaply by water than by rail, at prices *pro rata* with those given to Burlington, the cost per 1000 feet by water will be $1.26, and by rail $1.88, or 62cts per 1000 feet in favour of the barge.

The Railway will however be able to reach many lumber producing points which cannot be touched by the boats.

During seasons like the past when the navigation of the Ottawa and St. Lawrence has been seriously interrupted by lowness of water, the delay in getting the lumber forward to Montreal must have entailed very heavy losses both on the producer, and also on the shipping interests of the Port. Many millions of feet intended for export, have been unable to come down at all, while that which arrived, did so tardily, and at a considerable advance on the ordinary rates. The detention of ocean shipping has in consequence been great.

With the railway in operation, all this expense and delay would have been avoided, and much greater shipments been made from Montreal.

The Northern Colonization Road, touching the harbour of Montreal, at Hochelaga, will be in the best possible position for easy connection with the shipping visiting this port. Large harbour extensions must take place in the admirably situated Hochelaga Bay, both for the accommodation of this great lumber export trade of the Ottawa Valley, and for the vast through trade of the inter-oceanic railway, which will have one of its important termini at this place, the western end of the harbour being more appropriately devoted to the trade of the St. Lawrence Valley *via* the Grand Trunk.

Before concluding the report, it may be well to give a few statistics in relation to population and the leading productions of the country to be opened up and connected with the cities of Montreal and Ottawa, and from this form some general idea of the amount of traffic which will flow over the line.

The census of the agricultural products for 1870 and 1871 is not yet published. I have received, however, the returns for the population, and by comparing them with those for 1860 and 1861, have ascertained the ratio of increase for the decade. A similar proportion of increase may with propriety be applied to the products as given for 1860, or giving a result sufficiently close for our present purpose.

By those returns the counties to be traversed by your road, or influenced thereby, viz., Laval, Terrebonne, Two Mountains, Argenteuil, Ottawa and Pontiac, show a population of 111,923, the County of Ottawa alone having a population of 38,629.

While on the south side of the river, the counties of Prescott and Russell show a population of 35,991. As before stated, a belt along the front of these counties of several miles in depth from the river will be more immediately under the influence of your road than of that

projected by the "Montreal and City of Ottawa Junction Company," in the rear of the counties; your line will therefore draw a portion of its traffic from this district.

From a careful examination of the entire country traversed or influenced by the "Montreal Northern Colonization Road," and its branch to St. Jerome, it is regarded as highly probable that a population of 116,500 will find this the most direct route to the cities of Montreal and Ottawa, independently of the large through travel in each direction. What this latter may amount to, is difficult to state, but when regarded as a direct route for business men or tourists visiting the commercial and political capitals, and also for lumber men, we shall be quite within the limit in placing this class at 13,500 per annum, making a total of 130,500 passengers who will travel annually an average distance, coming and going, of 60 miles, at a fare of $1.50 each.

In the accompanying table of the leading agricultural products of the several counties traversed by the line, we have allowed one half of the total quantity as coming directly within the carrying range of the road, and that, with the facilities offered, at least one half of this last amount, or 49,400 tons, will be sent to market, either to Montreal, Ottawa, or to the lumbering establishments; that an additional quantity will be obtained from the south shore of 5000 tons, and that about one fourth part of this produce tonnage will come into the country in the form of merchandise, making an aggregate amount of about 68,000 tons to be carried an average distance of 30 miles at the rate of 4 cents a ton per mile or a total charge of $1.20 per ton.

It has been shown that a great saving will be effected in the carrying of lumber by rail, over the present water transport, and, no doubt, your line will command a large percentage of this traffic. To move the total quantity of 190,000,000 feet, now sent annually to the American market from Ottawa and Hull, to say nothing of the large additional quantity at different points on the route, would require 19,000 car loads carrying 10,000 feet per car, or six trains, each made up of ten loaded cars during every working day of the year. From this it appears that there is work enough for several lines of road, and, no doubt, steps will be taken to construct them. To be far within the realm of safety, we will assume that but one third of this quantity is carried by your road, amounting, with a proportion of way lumber to, say 70,000,000 feet, at the rate of $1.88 per thousand, for 119½ miles.

Your line will also be a postal route between the capital and the south and east, as well as for the European mails. It will conse-

quently be entitled to a government subsidy for the service of at least $12,000 per annum.

Abstracting the leading items mentioned we have the following traffic results:—

Passengers: 130,000 @ $1.50 each.	$ 195,000
Freight: 68,000 tons @ $1.20.	81,600
Lumber: 70,000,000 feet @ $1.88 per thousand.	131,600
Fire wood from St. Jerome, 100,000 cords @ $2.00 per cord.	200,000
Mail subsidy.	12,000
Total Receipts	$620,200
Now if the liberal allowance of 80 per cent. for traffic expenses, wear and tear, and renewals be allowed, there will be on this account	$496,160
	$124,040
To this balance add Government subsidy to St. Jerome, 13·36 miles @ $5,000 per mile, equal to $66,800 @ 3 per cent.	$2,004
	$126,444
Leaving a balance of, say $126,000 to meet interest on stock and bonds. **We** have already ascertained that the total cost of the line, including St. Jerome branch, is	$3,675,487
From this deduct the estimated value of the land grant, 1,200,000 acres @ $1.00 per acre.	$1,200,000
Leaving a balance to be provided by stock and bond subscriptions of	$2,475,487

This amount at 7 per cent., the usual rate of interest, will require an annual sum of $173,284, or a surplus over the available revenue of $46,284, giving actually only a trifle over 5 per cent. to the stock and bond holders.

If the Ontario system of granting Railway bonuses or free gifts is adopted by the municipalities in connection with your road, the following will be the financial exhibit.

Cost of road as before.		$3,675,487
Deduct Land Grant	$1,200 000	
" Municipal Grants	$1,500,000	2,700,000
Leaving balance to be provided		$ 975,487

At the same rate of interest, 7 per cent., there would be required by the Company to meet the interest on the bonds, an annual sum of $68,284.

The balance of earnings, $126,000, still holding good, there is a surplus, after paying the 7 per cent. bonds, of $57,716, or equal altogether to an annual interest of nearly 13 per cent.

Viewed as a line terminating at Ottawa City, and accommodating but the local traffic indicated, the project cannot be pronounced a

financial success, in the event of the municipalities adopting the stock system of aid. Railway Bonds, bearing so low a rate of interest as five per cent., cannot be floated. We have endeavoured to ascertain the maximum cost of the road, and the minimum quantity of freight to pass over it at reasonably paying rates, and a liberal allowance for cost of traffic, &c. The capitalist, however, does not, as a rule, take the same *couleur de rose* view of the final results as the engineer, and consequently demands a wider margin.

In the event of your road forming a link in the Inter-Oceanic Railway, either *via* Sault Ste. Marie, or the north shore of Lake Superior, thereby accommodating the enormous streams of through traffic, in addition to its own legitimate local business, then perhaps the capitalists might view the investment with more favour, and place themselves on the same platform with the stock-taking municipalities.

On the other hand, if the municipalities adopt the bonus plan, advancing the money *pro rata* with the progress of the work, the bonds are proportionally strengthened, and capitalists will find a margin sufficiently great to guarantee them against any probable error in the engineer's under or over estimates.

An important question, connected with the scheme in the event of its union with the Northern American Pacific Road, (in fact forming the keystone,) is that of a bridge over the St. Lawrence, at or in the neighbourhood of Montreal, by this means giving an independent rail connection with the eastern seaboard.

The Victoria Bridge will in a few years reach its maximum capacity for transit, and will be tested to its full extent in that respect, simply to accommodate the trade of the St. Lawrence Valley and its tributaries west of St. Ann's.

The present trade of the Ottawa Valley, gigantic as its proportions are, is really but in its infancy, and soon will require all the additional outlets which can be furnished, either by rail or water; supplementing all this will be the traffic on this "Air Line" from Atlantic to Pacific Oceans, carrying to or from these points and intervening ones, the vast trade of the Northern part of the continent. Few minds can grasp its future extent, or the facilities required for its efficient accommodation.

Viewing this bridge as an independent work financially, although so closely connected with the welfare of your road, I will not allude to it at any length on this occasion. Its cost should be spread over the entire mileage of the Atlantic and Pacific Road, and made essentially an international work.

An elaborate investigation and report will be required to determine its precise location and character.

Several sites present themselves: one by a high level iron tubular bridge, spanning the river near the foot of St. Helen's Island, of sufficient height to permit ships to pass underneath, and continued as a viaduct across the portion of the city existing between St. Mary's current, and the height of land at Côte-à-Barron. The railway to be carried through the tubes as in the Victoria Bridge, but carriage ways of ten or twelve feet in width would be bracketed from each side for ordinary traffic. City cars, to be drawn by dummy engines, with tracks placed on the top, could also be provided, as well as foot walks, &c.

The bridge arranged in the foregoing manner would connect the south shore with the city at all seasons of the year, and also the beautiful Island of St. Helen, so admirably adapted for a park.

I now, Mr. President, and gentlemen, bring my report to a close. I have endeavoured to place the whole subject of the Montreal Northern Colonization Railway fairly and succinctly before you, both as regards its history, location, cost, traffic, revenue and rival routes.

You have received all the figures and information in my possession with reference to this most important work.

It is for the public to judge of the correctness of your engineer's conclusions, and if they are substantiated and pronounced correct by those judges, then in the name of everything which is progressive, let the work be commenced and completed with the least possible delay.

I have the honour to be,
Mr. President and Gentlemen,
Your obedient servant,

CHARLES LEGGE,
Chief Engineer,
M. N. C. Railway.

TABLE OF AGRICULTURAL PRODUCTS, &c., OF COUNTIES TRAVERSED BY THE MONTREAL, NORTHERN COLONIZATION RAILWAY—MONTREAL TO OTTAWA—INCLUDING THE COUNTY OF PONTIAC.

Counties.	Agricultural Products as given by Census of 1860-61.					Value of LiveStock	Cash Value of Farms and Farming Implements	Land held in Acres.	Wood and Wild Lands.	Land Cultivated.
		Root			Beef and					

TABLE, Shewing Population of Counties traversed by the Montreal Northern Colonization Railway, or influenced by it; by the Censuses of 1860–61, and 1870–71.

North side of Ottawa.			South side of Ottawa.		
Counties.	By Census of 1860–61.	By Census of 1870–71.	Counties.	By Census of 1860–61.	By Census of 1870–71.
Laval	10,507	9,472	Prescott and Russell . . .	22,323	35,991
Terrebonne . .	19,460	19,591			
Two Mountains	18,408	15,615			
Argenteuil . . .	12,897	12,806			
Ottawa	27,757	38,629			
Pontiac	14,125	15,810			
Total	103,154	111,923			

Abstract.

Present Population N. Side, say	112,000
And will draw from S. Side, say	4,500
Through Passengers, ...	13,500
Total estimated Pass. Traffic, .	130,000

TABLE OF AGRICULTURAL PRODUCTS, &c., OF COUNTIES TRAVERSED BY THE MONTREAL, NORTHERN COLONIZATION RAILWAY—MONTREAL TO OTTAWA—INCLUDING THE COUNTY OF PONTIAC.

Counties.	Agricultural Products as given by Census of 1860-61.						Value of LiveStock	Cash Value of Farms and Farming Implements.	Land held in Acres.	Wood and Wild Lands.	Land Cultivated.
	Cereals.	Root Crops.	Hay.	Butter.	Cheese	Beef and Pork.					
	Minots.	Minots.	Tons.	lbs.	lbs.	Bbls.	$	$	Acres.	Acres.	Acres.
Laval	357,108	153,696	4,894	182,920	4,144	665	275,361	3,052,407	71,510	16,061	.....
Terrebonne	474,536	249,605	9,340	327,125	2,356	3,315	400,340	3,315,908	217,235	124,029	.....
Two Mountains	670,780	248,665	13,628	410,711	5,426	1,640	568,822	4,672,893	181,656	65,811	.....
Argenteuil	364,149	258,296	10,927	362,078	22,825	1,421	351,161	1,312,558	179,095	109,636	.....
Ottawa	506,259	394,573	18,861	296,521	6,389	1,582	633,103	3,106,806	362,127	293,065	.....
Pontiac	493,523	341,970	10,711	262,212	4,597	1,400	380,676	1,263,054	212,226	157,611	.....
Total for year 1860	2,866,355	1,646,805	68,361	1,841,567	45,737	10,023	2,609,463	16,723,626	1,223,849	766,213	457,636
Reduced to Tons	71,659	41,170	68,361	920	22½	1002	.....	.....	.....	....	.....

Total aggregate Tonnage for year 1860,	183,134	tons.
Add 8½ per cent. for increase to year 1870,	15,566	"
	198,700	"
Or say	198,000	"
Of this amount one-half may be sent to market, or	99,000	"
And of this probably one-half by rail, or	49,500	"
Passing on an average 30 miles, at the rate of 4 cents per ton per mile, or a total cost of $1.20		
Allow for merchandize and inward freight a proportion of ¼ of the outward agricultural freight, or at the same rate of transport.	12,375	"
To this add outward and inward freight for portion of County South of Ottawa, from Hawkesbury up, say	6,000	"
	67,875	"
Or say a total, in all, of	68,000	"

Probable Traffic from Counties of Prescott and Russell:

Total Tonnage of cereals, root crops and hay, for 1860,	42,165	tons.
Of which probably	5,000	"
will leave, and 1000 tons arrive, *via* M. N. C. Road	1,000	"
or a total of	6,000	"

TABLE, SHEWING POPULATION OF COUNTIES TRAVERSED BY THE MONTREAL NORTHERN COLONIZATION RAILWAY, OR INFLUENCED BY IT; BY THE CENSUSES OF 1860–61, AND 1870–71.

NORTH SIDE OF OTTAWA.			SOUTH SIDE OF OTTAWA.		
COUNTIES.	By Census of 1860–61.	By Census of 1870–71.	COUNTIES.	By Census of 1860–61.	By Census of 1870–71.
Laval	10,507	9,472	Prescott and Russell . . .	22,323	35,991
Terrebonne . .	19,460	19,591			
Two Mountains	18,408	15,615			
Argenteuil . . .	12,897	12,806			
Ottawa	27,757	38,629			
Pontiac	14,125	15,810			
Total	103,154	111,923			
		103,154			
An Increase of . . . . . Or 8½ per ct. for the decade.		8,769			

ABSTRACT.

Present Population N. Side, say	112,000
And will draw from S. Side, say	4,500
Through Passengers, ...	13,500
Total estimated Pass. Traffic, .	130,000

Who will probably travel an average distance, coming and going, of 60 miles @ 2½ cents per mile, or a total charge of $1.50 for each passenger.

APPROXIMATE ESTIMATE OF LUMBER CUT BY THE DIFFERENT MILLS BETWEEN GRENVILLE AND AYLMER, ON THE NORTH SHORE OF OTTAWA RIVER, ANNUALLY,—AND AT OTTAWA CITY, ON THE SOUTH SHORE.

	Feet.
NORTH NATION.—J. A. Cameron & Co	13,000,000
THURSO.—Cameron & Edwards	6,000,000
BUCKINGHAM.—LeMoyne, Gibb & Co	15,000,000
Do. Jas. McLaren & Co	16,000,000
Do. Buckingham Manufacturing Company	4,000,000
BLANCHE.—	2,000,000
Do. McLaurin & Blockburn	4,000,000
GATINEAU POINT	4,000,000
GATINEAU.—Gilmour & Co	30,000,000
Do. Welsh & Bro	5,000,000
CHAUDIERE.—E. B. Eddy	30,000,000
Wright, Botson & Currier	15,000,000
Crandall & Co	10,000,000
DESCHENE.—Mrs. R. Conroy	6,000,000
Total North Side	160,000,000
ON SOUTH SHORE IN OTTAWA CITY:	
Bronson, Weston & Co. 30,000,000	
A. H. Baldwin 25,000,000	
J. R. Booth 26,000,000	
Perley & Pattee 30,000,000	
Levi Young 15,000,000	
John Rochester & Co 2,000,000	
J. MacLaren & Co 15,000,000	
	143,000,000
Total amount	303,000,000

	103,154	Who will probably travel an average distance, coming and going, of 60 miles @ 2½ cents per mile, or a total charge of $1.50 for each passenger.
An Increase of	3,769	
Or 8½ per ct. for the decade.		

APPROXIMATE ESTIMATE OF LUMBER CUT BY THE DIFFERENT MILLS BETWEEN GRENVILLE AND AYLMER, ON THE NORTH SHORE OF OTTAWA RIVER, ANNUALLY,—AND AT OTTAWA CITY, ON THE SOUTH SHORE.

		Feet.
NORTH NATION.—J. A. Cameron & Co		13,000,000
THURSO.—Cameron & Edwards		6,000,000
BUCKINGHAM.—LeMoyne, Gibb & Co.		15,000,000
Do. Jas. McLaren & Co.		16,000,000
Do. Buckingham Manufacturing Company		4,000,000
BLANCHE.—		2,000,000
Do. McLaurin & Blockburn		4,000,000
GATINEAU POINT		4,000,000
GATINEAU.—Gilmour & Co		30,000,000
Do. Welsh & Bro		5,000,000
CHAUDIERE.—E. B. Eddy		30,000,000
Wright, Botson & Currier		15,000,000
Crandall & Co		10,000,000
DESCHEUE.—Mrs. R. Conroy		6,000,000
Total North Side		160,000,000
ON SOUTH SHORE IN OTTAWA CITY:		
Bronson, Weston & Co.	30,000,000	
A. H. Baldwin	25,000,000	
J. R. Booth	26,000,000	
Perley & Pattee	30,000,000	
Levi Young	15,000,000	
John Rochester & Co	2,000,000	
J. MacLaren & Co	15,000,000	
		143,000,000
Total amount		303,000,000

No. 1 With Large Post

Total amount..... 303,000,000

MAP

SHEWING THE LOCATION OF THE NORTHERN PACIFIC RAILWA

with its

CANADIAN EXTENSION TO MONTREAL,

viâ

CANADA CENTRAL AND

MONTREAL NORTHERN COLONIZATION RAILWAYS.

To accompany

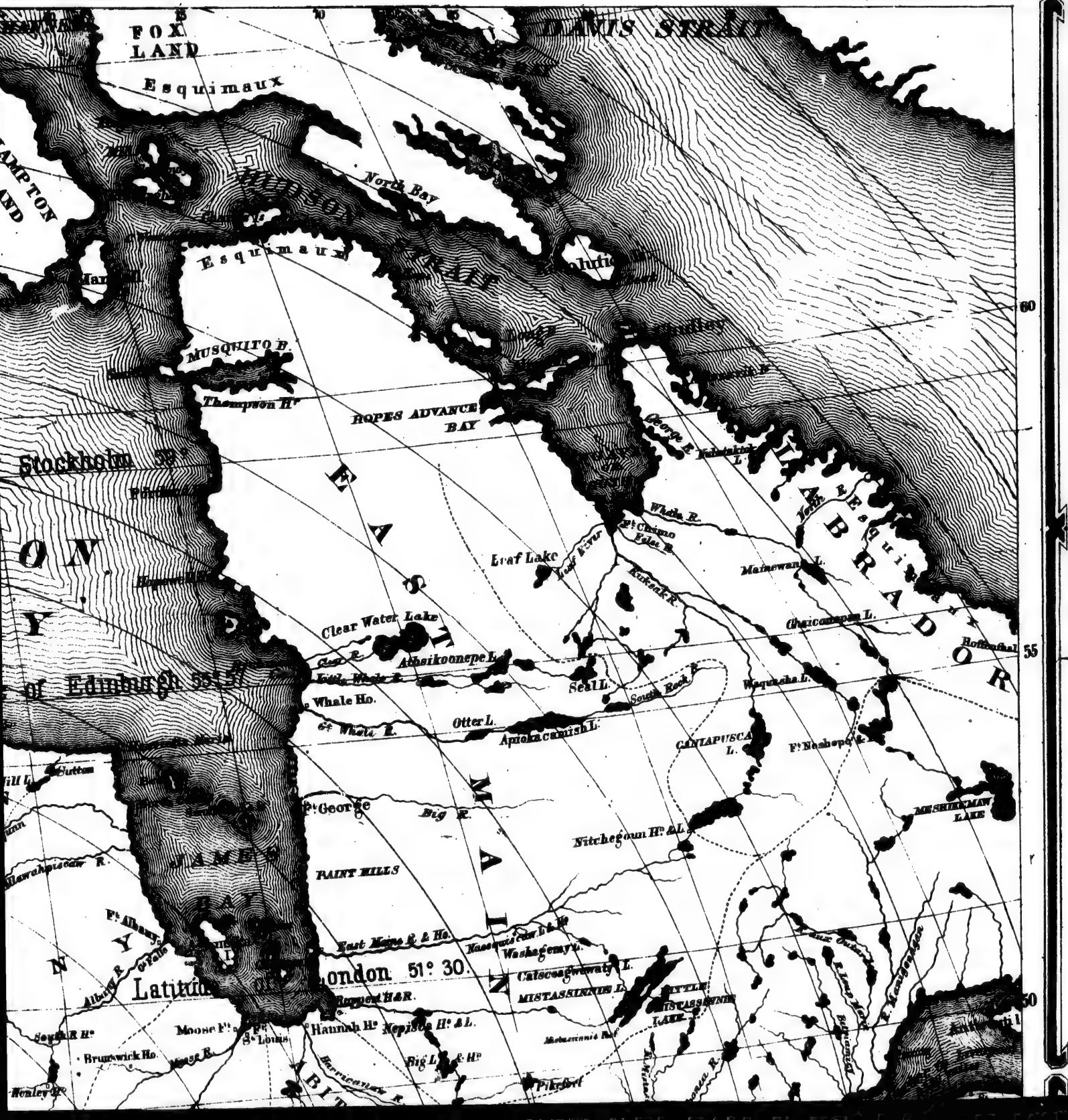
Mr Legge's Report

Charles Legge
Chief Engineer
Montreal Northern Colonization Railway

Montreal 19th January 1872.

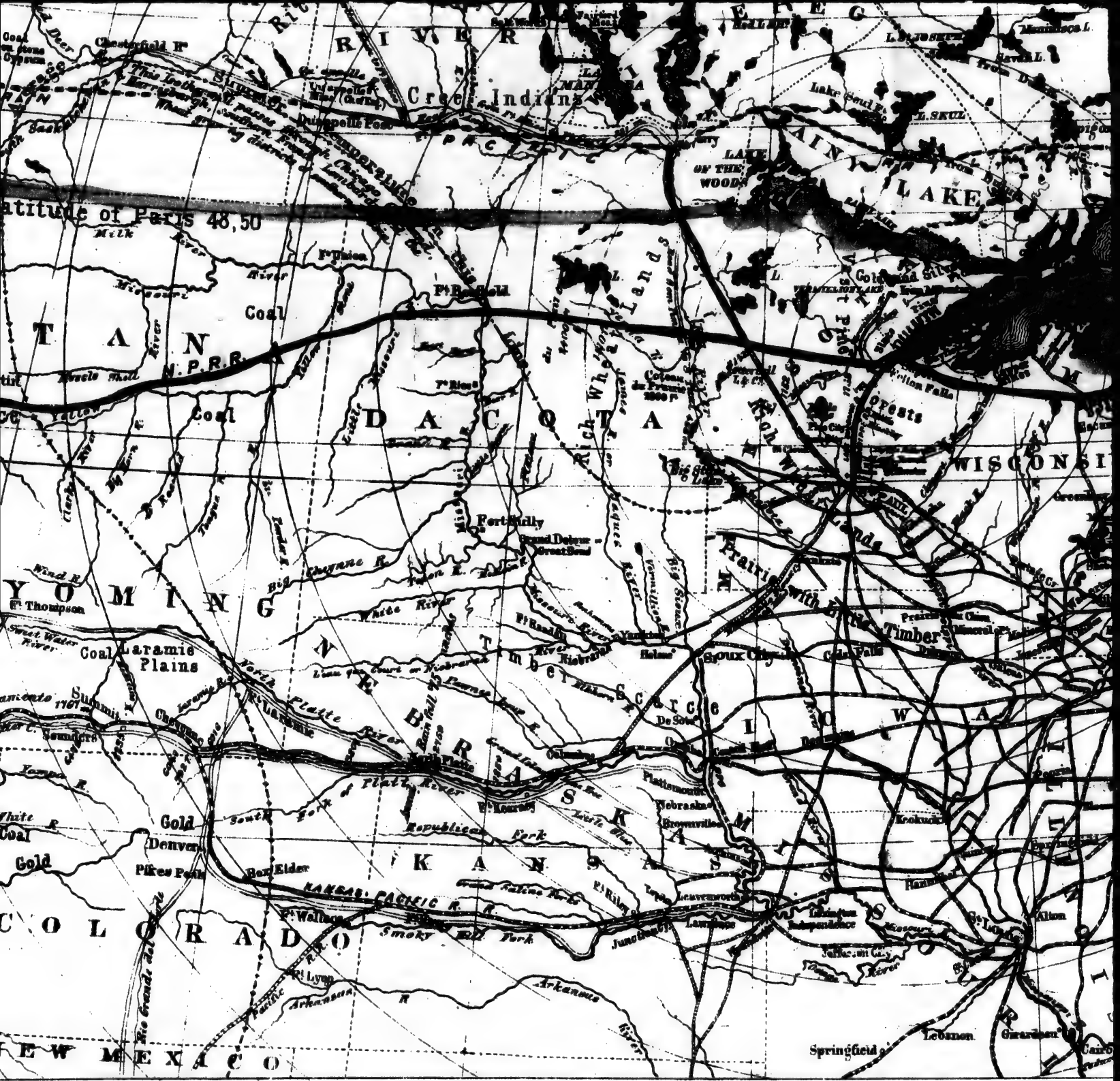
Indians
TIC RAILWAY
EAL,
ILWAYS.
ge's Report
Jany 1872.
Latitude 65°
Red Rock L.
Point L.
Great Fish R.
ALMER
Mark Ox L.
Sussex L.
Source of Great Fish River
BAKER L.
North Bay
Robin Hood B.
GOLDEN L.
From Indian report
From Indian report
GREAT
SLAVE LAKE
Dubawnt R.
R. Magusee
Theine R.
Thelaidaze R.
Seal R.
Big R.
Churchill
Pierre au Calumet
Bedford R.
Deer L. Ho.
Duck L.
Fine natural Pasture
Thick Forests
CUMBERLAND
Cumberland House
Jack Lake
Trout L. & Ft.
Beaver L. & Ho.
Albany L. & Ho.
Cat L.
Open Poplar Woods
Rich soil and fine pasture
Great Herds of Buffalo
Coal
Gold
Coal
Iron stone & Gypsum
Chesterfield Ho
Fort Pelly
Red L. & Ft.
L. St. JOSEPH
Swampy L. & Ho.
Fort York
Fort Severn
Nelson R.
Oxford Ho
Oxford L. & Ho.
Island River Ho
Deer R.
Moor R.
Seven L.
Manitou
Cat L.
Fort Reliance
Fort Resolution
Fort Wedderburn
Chipewyan
Fort Fond du Lac
ATHABASCA LAKE
Black L.
Peace R.
Slave R.
Athabasca R.
Mackenzie R.
Hay R.
Buffalo L.
Methy L. & Ft.
La Crosse L. & Ft.
English R.
Green L. & Ft.
Pine Island
Fort a la Corne
Cree Village
Swan R.
Assean.
Porcupine R.
Red R.
Rivière aux Gravois
Rivière aux Gravois
Rivière aux Gravois

Red Rock L.
Point L.
Great Fish R.
Lat. 65°
Musk Ox L.
ALMER
Sussex L.
Source of Great Fish River
BAKER L.
North Bay
Robin Hood B.
SOUTHAMPTON ISLAND
GOLDEN L.
From Indian report
From Indian report
DUBAWNT LAKE
Fort Reliance
LAKE
Dubawnt R.
L. MAGUSE
R. Magusse
Thelon R.
WEEKUSKWAD L.
Deer R.
Thelanaze R.
NORTH WILLOWED L.
1000 M. from Duluth
Seal R.
Big L.
Fort Churchill
HUDSON BAY
Latitude of Stockholm
Latitude of Edinburgh
Fort Fond du Lac
800 M. from Duluth
Seal R.
SANDY L.
Churchill R.
ATHABASCA LAKE
Black L.
Portage P.
Fond du Lac or the Good Hope Way
INDIAN L.
SWAN LAKE
Fort York
700 M. from Duluth
Nelson R.
Beau Calumet
WOLLASTON L.
Bedford R.
Granville L.
Fort Severn
Buffalo L.
Deer L. Ho.
Swampy L. & Ho.
English R.
Duck R.
Fort Assean
800 M. from Duluth
Nelson L. & Ho.
Oxford Ho.
Mill L.
Sutton
Green L. & Fort
Cumberland Ho.
Cedar L.
Jack Lake
500 M. from Duluth
Trout L. & Fort
Beaver L. & Ho.
Family L.
Albany L. & Ho.
Cat L.
600 M. from Duluth
Fort a la Corne
Fort Pelly
Red Lake Ho.
L. St. Joseph
Manitusca L.
Lake Seul Fort
Cree Indians


FOX LAND
Esquimaux
DAVIS STRAIT
HUDSON
North Bay
Esquimaux
MUSQUITO B.
Thompson Hope
HOPES ADVANCE BAY
Stockholm 58°
Edinburgh 55° 57'
Leaf Lake
Leaf River
Whale R.
Pt Chimo
Eyles R.
Kaiuk R.
Mainewan L.
Clear Water Lake
Atheikoonepe L.
Seal L.
South Rock
Waquaicha L.
Chaicomapen L.
Whale Ho.
Otter L.
Apookacamish L.
CANIAPUSCA L.
Pt Neshope
MISHIKAMAW LAKE
Pt George
Big R.
Nitchegoun Hope & L.
PAINT HILLS
East Main R. & Ho.
Washegemyu
London 51° 30'
Calscoagwetay L.
MISTASSINNIS L.
LITTLE MISTASSINNIS LAKE
Hannah Hope
Kepisco Hope & L.
Moose Pt
Fort St Louis
Brunswick Ho.
Big L. & Hope
Pikedevil
Henley Hope
LABRADOR
60
55
50

MAP SHOWING TH

LEGGO & CO. PHOTO-STEAM LITH. MONTREAL.

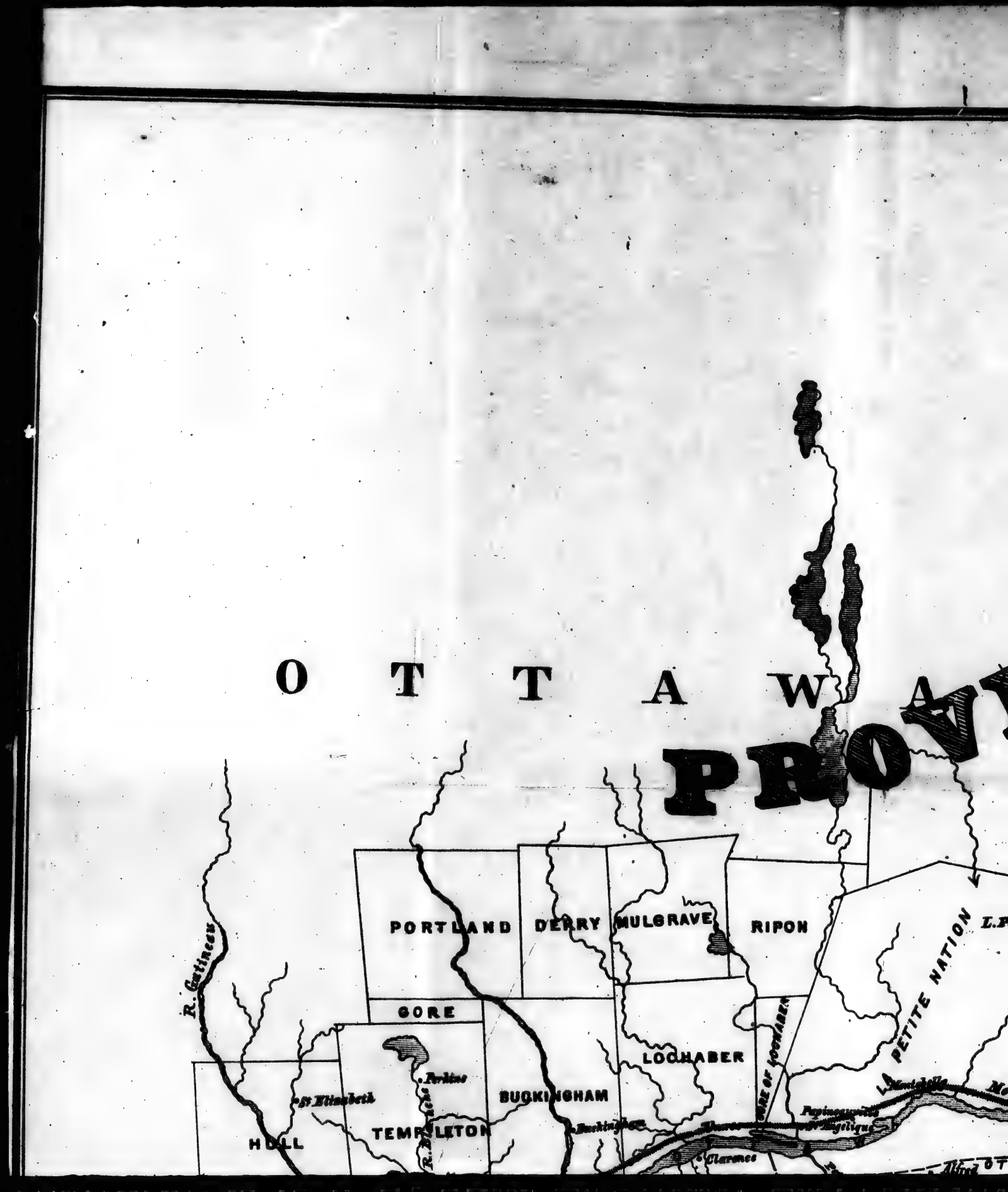


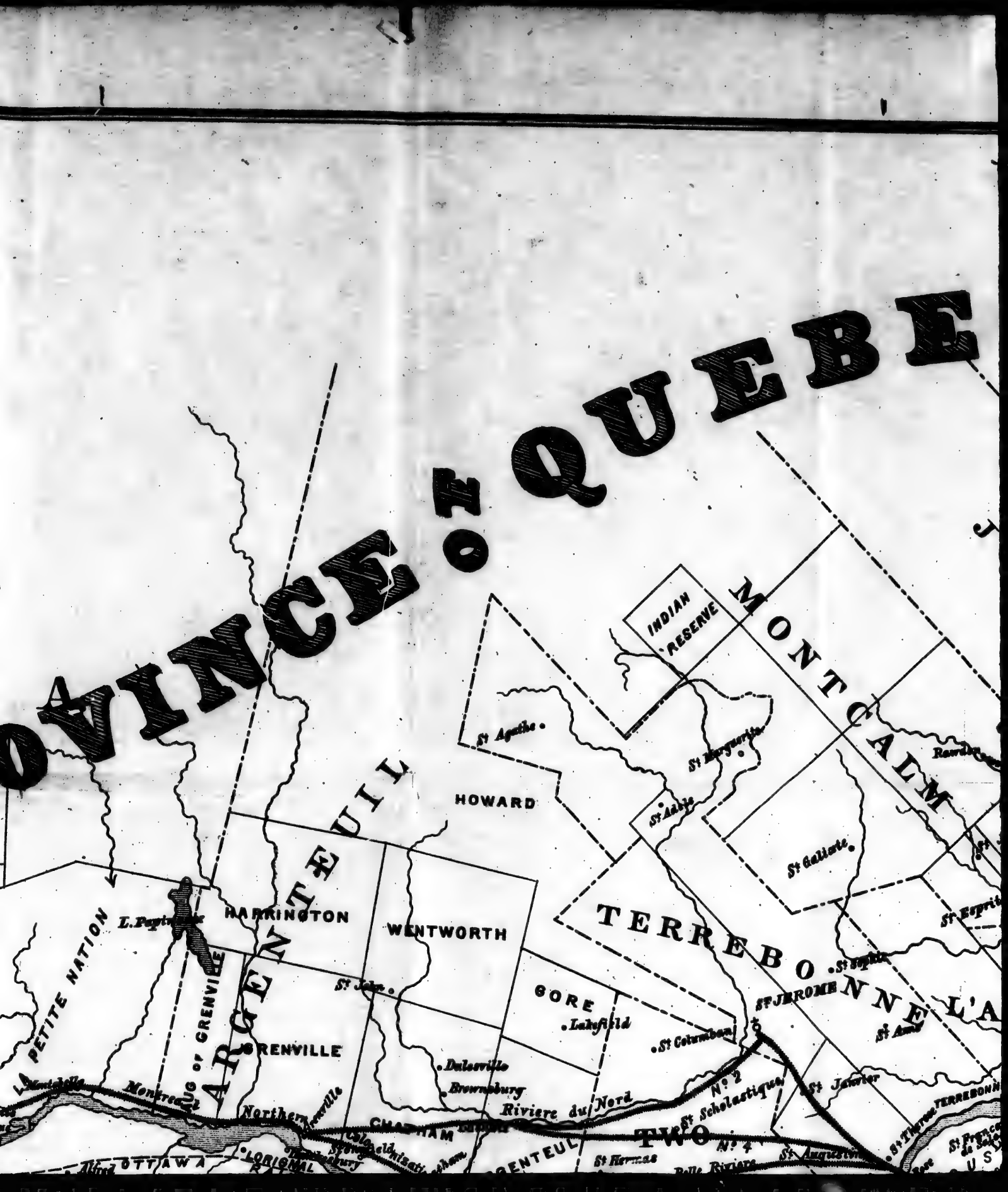
G THE LOCATION OF THE NORTH

LOCATION OF THE NORTHERN P

RN PACIFIC RAIL ROAD.

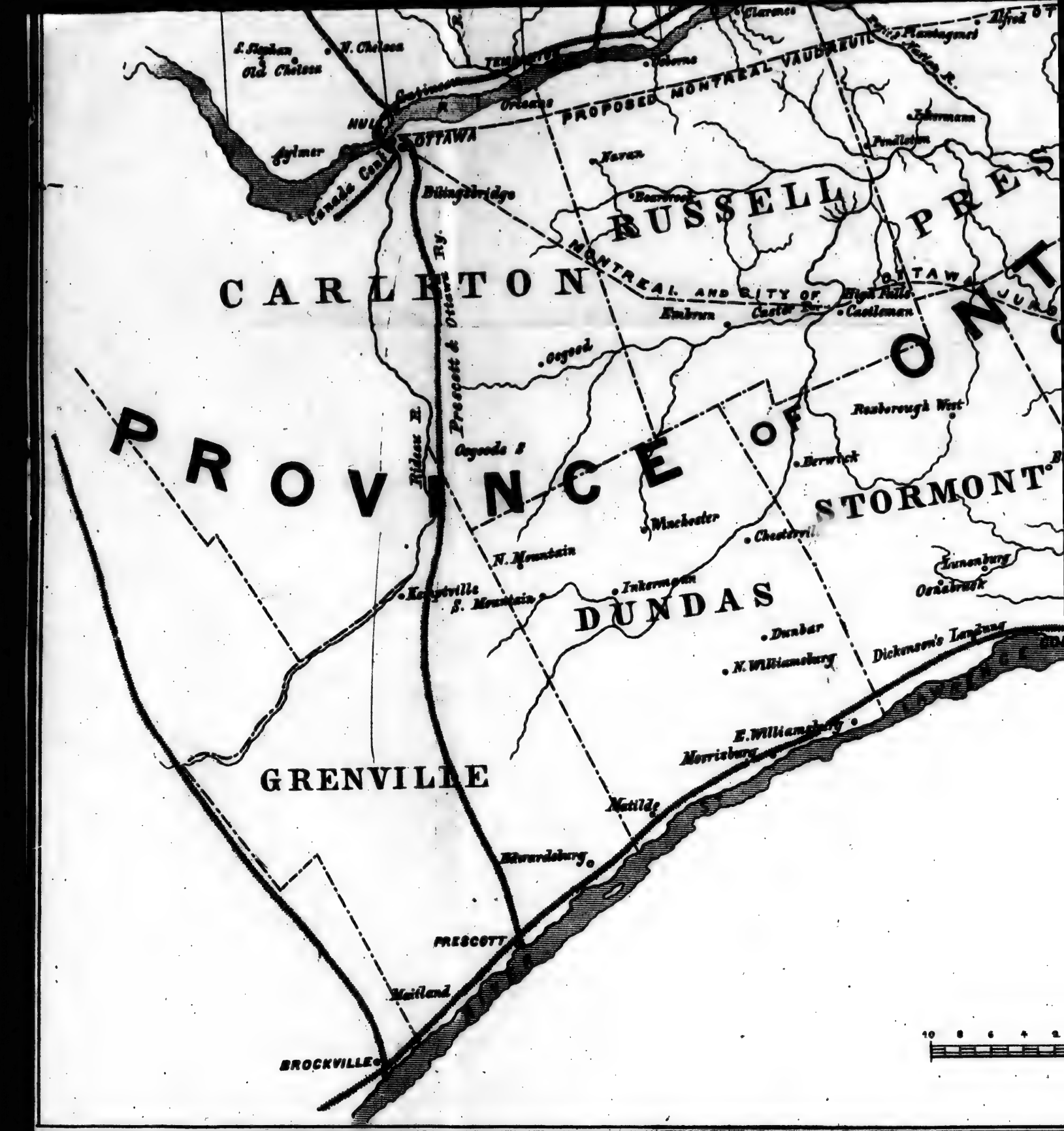
No. 2
Wiki-Leaks Report


O T T A W A
PROV
PORTLAND
DERRY
MULGRAVE
RIPON
L.P
LA PETITE NATION
R. Gatineau
GORE
LOCHABER
GORE OF LOCHABER
Perkins
St Elizabeth
BUCKINGHAM
TEMPLETON
HULL
R. Blanche
Buckingham
Papineauville
St Angelique
Clarence
Alfred


OVINCE of QUEBE
INDIAN RESERVE
MONTCALM
St Agathe
St Marguerite
St Adèle
St Gabriel
HOWARD
ARGENTEUIL
HARRINGTON
WENTWORTH
TERREBONNE
L'A
L. Papineau
LA PETITE NATION
St John
GRENVILLE
GORE
Lakefield
St Jerome
St Sophie
St Columban
Dalesville
Brownsburg
Riviere du Nord
St Scholastique
St Janvier
Montreal
Northern
CHATHAM
TWO
St Hermas
Belle Riviere
OTTAWA
LORIGNAL

EBEC
MASKINONGE
ST MAURICE
BERTHIER
JOLIETTE
MONTCALM
L'ASSOMPTION
TERREBONNE
ST JEROME
SOREL
St Gabriel
St Jean de Matha
St Norbert
St Gilbert
St Elizabeth
Rawdon
Joliette
St Paul
St Thomas
St Jacques
St Alexis
St Esprit
St Sulpice
St Ambroise
St Henry
St Scholastique
St Janvier
St Augustin
St Thomas
St François de Sales
St Vincent de Paul
Belle Rivière
Contrecœur
Lanoraie
Repentigny
Berthier
Lavaltrie
Varennes

CHAMPLAIN
St Prosper
Cap Rouge
Pointe aux Trembles
Ste Anne
Ste Famille
I. Dame de Canard
St Maurice
Cap de la Madeleine
THREE RIVERS
Pointe du Lac
Yamachiche


PROVINCE OF ONT
CARLETON
RUSSELL
PRES
GRENVILLE
DUNDAS
STORMONT
PROPOSED MONTREAL VAUDREUIL
MONTREAL AND CITY OF
Prescott & Ottawa Ry.
Rideau R.
OTTAWA
Aylmer
Canada Cent.
Billingsbridge
Navan
Embrun
Castleman
Osgood
Oxford
Berwick
Manchester
Chesterville
N. Mountain
Inkerman
Kenyonville
S. Mountain
Dunbar
N. Williamsburg
Dickinson's Landing
Iroquois
Matilda
Edwardsburg
PRESCOTT
Maitland
BROCKVILLE
Morrisburg
Osnabruck
Roxborough West
Finlayson
Pendleton
Clarence
Alfred
Orleans
Gloucester
St. Stephen
Old Chelsea
N. Chelsea

PRESCOTT
ONTARIO
GLENGARY
VAUDREUIL
NEWTON
SOULANGES
RIGAUD
MOUNTAINS
Lochiel
Alexandria
Dalhousie
St Raphael
Martintown
St Andrew
Lunenburg
Osnabruck
Summerstown
CORNWALL
Vaudreuil
St Joseph
St Placid
English Point
Mission
Ile Perrot
St Jeanne
Grand I.
St Zotique
St Regis
Belle Rivière
Railway
Alfred
OTTAWA
JUNCTION
RAILWAY
KINGSFORD
Riparid
Hudson
St Martin
St Anne
Bexborough
St Benoit
St Hermas
St Antoine
St Clet
St Genevieve
St Ann
Lachi
SCALE OF STATUTE MILES.
10 8 6 4 2 0 10 20 30 40 50

SHI

Charle
Chf

SCALE OF STATUTE MILES.

30 40 50 60 70 80 90

M.N.C.R.

MAP

SHEWING LINE FROM MONTREAL TO OTTAWA,

TO ACCOMPANY

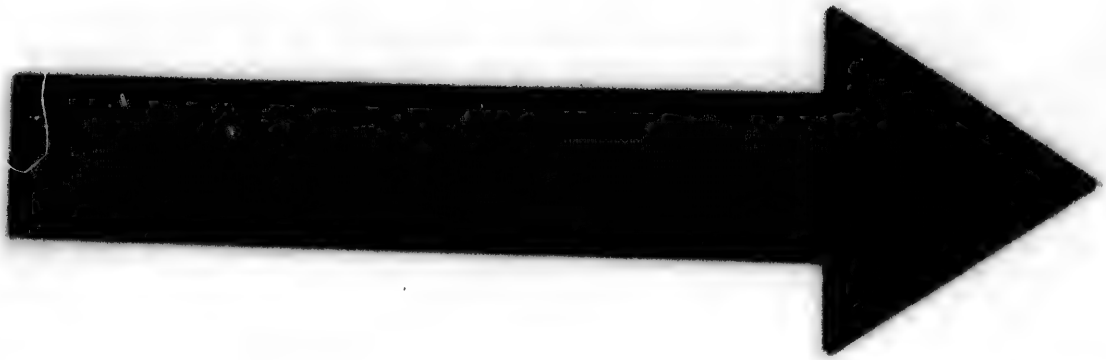
MR LEGGE'S REPORT.

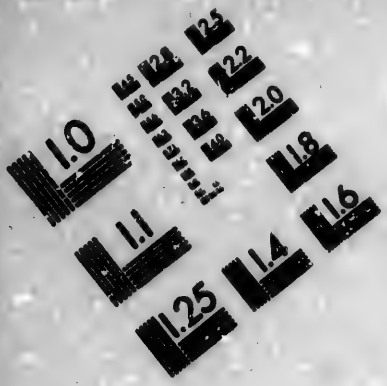
Charles Legge
Chf Engr. M.N.C.R.

MONTREAL, 19TH JANUARY 1872.

LEGGO & Co, STEAM-LITH. MONTREAL.

No 3. Work Register Report.





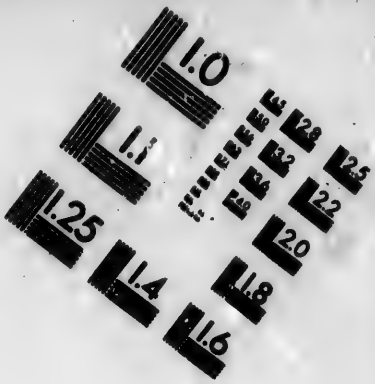
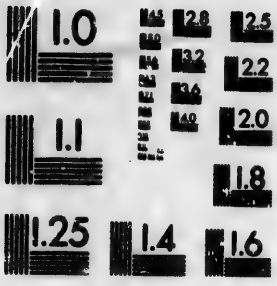
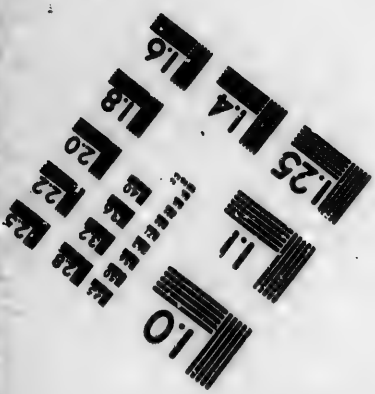
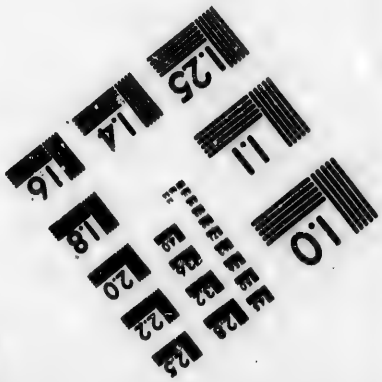


IMAGE EVALUATION TEST TARGET (MT-3)







Photographic Sciences Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

M.N.C.R.

MAP

Shewing Various Lines Between
Montreal & Grenville.

Referred to in Mr. Legge's Report.

Charles Legge
Chf Engr. M.N.C.R.

MONTREAL, 18TH JANY 1872.

Riv. Rouge
GRENVILLE
RIGAUD
QUEBEC
LACHUTE
St JEROME
ST AUGUSTINE

Chf Engr. M.N.C.R.)

KL TWO

ST. PLACIDE

DES DE

DEBOIT

SYKES LINE

No 4. LINE

No 3. LINE

RAILWAY

ST. EUSTACHE

ILE BIZARD

ST. GENEVIEVE

POINTE CLAIRE

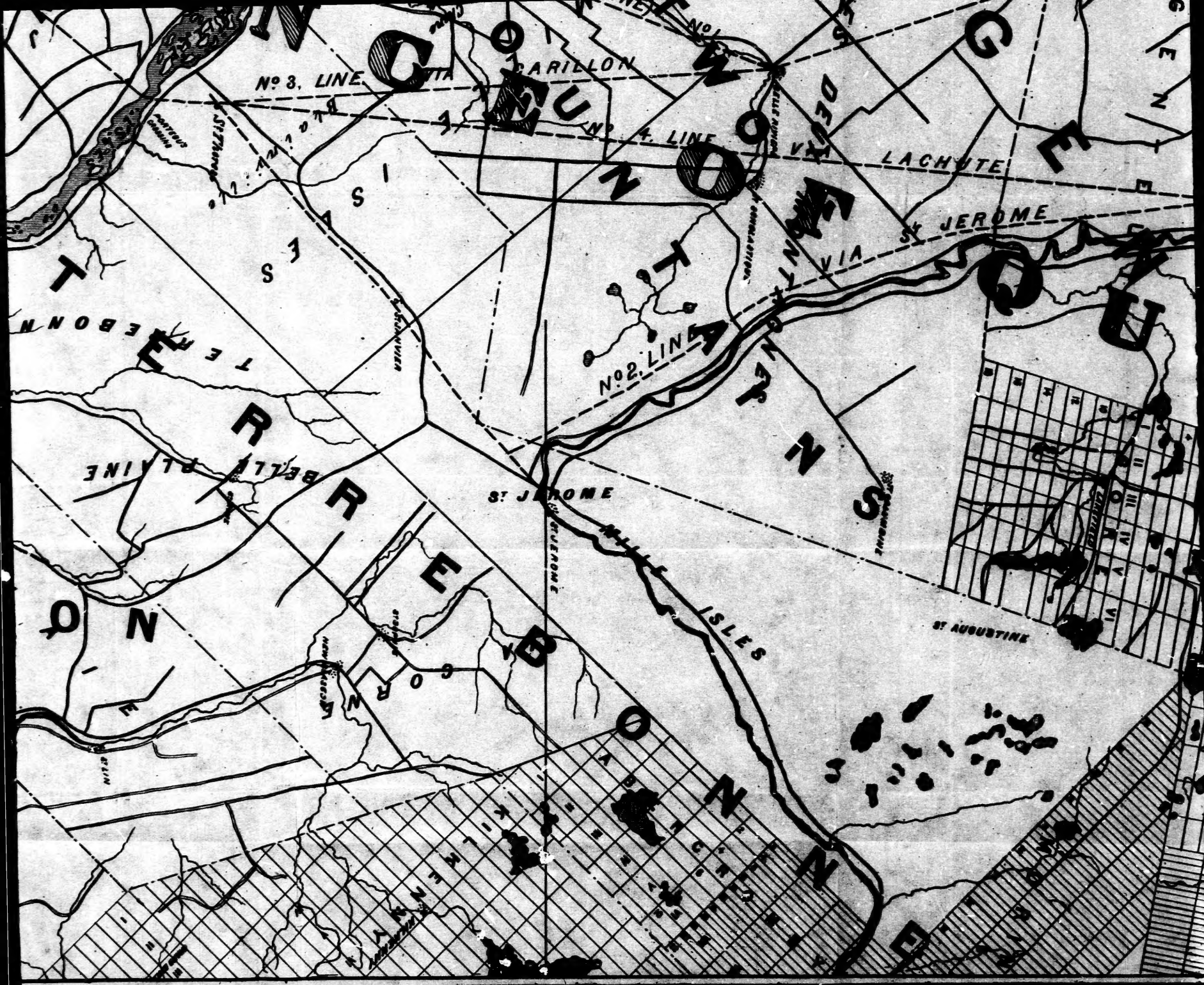
BYTOWN

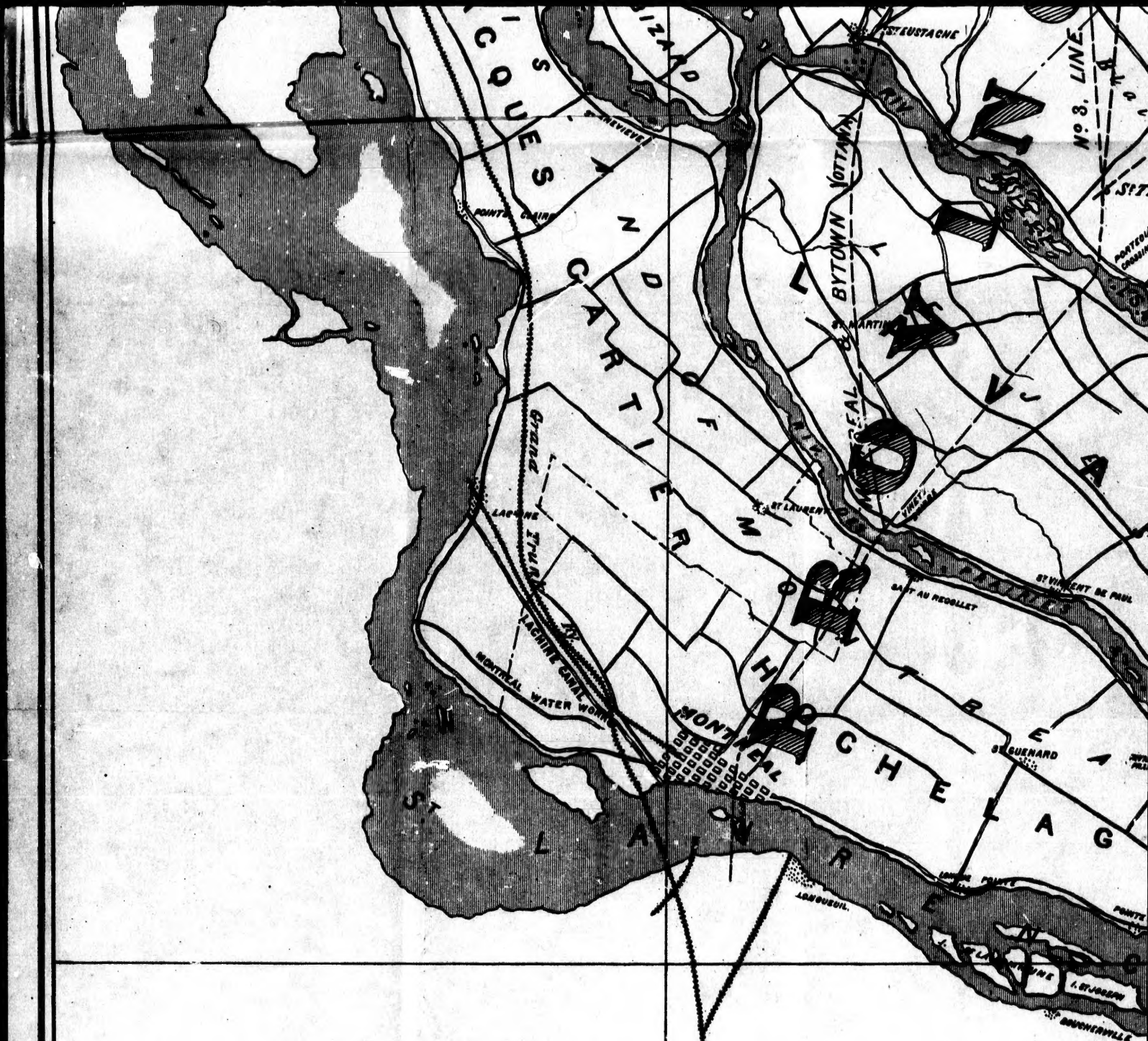
ST. MARTIN

CARTIER

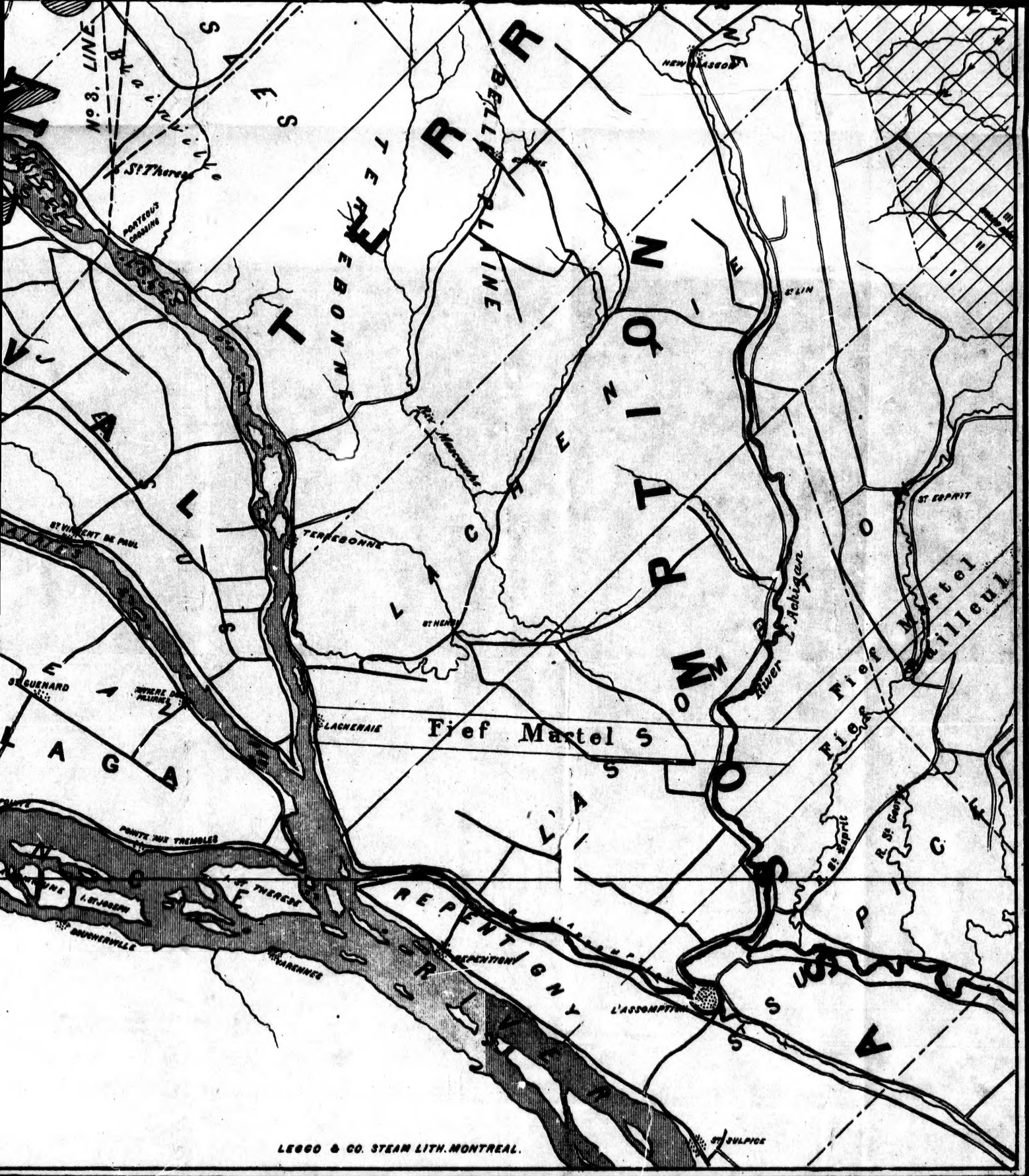
JACQUES

MONTREAL


TERREBONNE
No 3. LINE
No 4. LINE
No 2. LINE
CARILLON
LACHUTE
VIA
St JEROME
ISLES
ST AUGUSTINE
MONTCALM
GORE
BELL LINE
TERREBONNE
MONTCALM
ISLES



Scale 2 Miles to One Inch


No 3. LINE
St Thomas
PORTEOUS CROSSING
TERREBONNE
Bell Line
NEW GLASGOW
St LIN
Rivière Mascouche
L'ASSOMPTION
River L'Achigan
ST ESPRIT
ST VINCENT DE PAUL
TERREBONNE
ST HENRI
ST GUENARD
LACHENAIE
Fief Martel S
Fief Martel
Fief Villeul
POINTE AUX TREMBLES
R. St Esprit
R. St Georges
ST THERESE
REPENTIGNY
L'ASSOMPTION
BOUCHERVILLE
VARENNES
ST SULPICE
LEGGO & CO. STEAM LITH. MONTREAL.